

ARITHMETICAL ESSENTIALS

FOURTH GRADE

Maximum Course

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PREFACE

This series of texts covers the arithmetic work of the modern curriculum from the second to the eighth grade inclusive.

Three important aims are observed in the selection and organization of the material used:

- (1) to establish satisfactory habits of dealing with all ordinary numerical processes involving integers, mixed numbers, common and decimal fractions,
- (2) to secure the ability to organize and apply these habits in finding and expressing numerical relations in what is usually called problem solving,
- (3) to give pupils a social insight into familiar business and industrial practices and to provide them with a working knowledge of the common business forms.

The problems of Book One deal with those children's interests which have arithmetical significance for them; those of Book Two deal with the interests of grown people which may be brought within the experience of the children of the intermediate grades; those of Book Three are intended to give pupils an insight into business and industrial practices.

Throughout the series practice in computing has frequently been separated from problem solving in order to secure speed and accuracy. Immediate provision has however been made for the application of the habits formed in this way to the solution of problems from real life situations.

Pupils are frequently challenged to measure their own achievement against that of their classmates or against the records of others in their grade. They are also urged to note their own progress in process work. To secure these results time limits are put on many exercises, the standards of achievement for comparable groups are stated, and pupils are urged to do better in future trials.

The books throughout have been written directly to children. All pedagogical explanations or justifications of procedure intended for the teacher are omitted from the text. The intention has been to make all explanations so clear that a normal child can understand the procedure without the help of a teacher.

The authors wish to express their indebtedness to the many teachers, principals, school superintendents, and business men who have aided in the preparation of these texts by their criticisms and suggestions.

SUGGESTIONS TO TEACHERS

This Book aims to make children feel a real use for arithmetic. The arithmetical content is presented thru concrete life situations familiar to children which demand the knowledge and use of this content. The games used are not intended for purposes of drill but to show children where a knowledge of numbers is necessary in their ordinary activities. After a desire for efficiency has been created thru these games, speed and accuracy are secured thru concentrated repetition in timed tests. Artificial games and devices for teaching arithmetic that have been invented solely for school room purposes are omitted.

The emphasis in this Book has been put on making clear to children the specific social situations in which each fact and process taught can be used and to secure efficiency in these facts and processes thru their application to these situations. All attempts at rationalizing, or of having children discover these facts and processes for themselves, have been omitted since these methods of procedure contribute nothing to speed and accuracy in their use, or to the ability to apply them to the right situations.

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ARITHMETICAL ESSENTIALS

FOURTH GRADE—CHAPTER IV



WORKING AND PLAYING

Some boys in the fourth grade like to do these things.

1. John likes to visit his grandmother twice a year. It costs \$2.97 for a one way ticket. What will it cost John to go and return twice?
2. Rob likes to work in his garden. He spent \$3.68 on it last year and sold vegetables to the amount of \$20.70. What did he make?
3. Arthur likes to make kites. He sold 25 kites at 7¢ each. How much did he make in all?
4. Edward makes toys. He made 39 one summer and sold them at 6¢ each. How much did he make in all?
5. Louis likes to hunt in the woods with his father. One day to get to the woods they rode 27 miles on a train, then walked 3 miles, and then rode in an automobile 39 miles. How far did they go?

6. Louis and his father caught 15 rabbits and sold 9 of them at 18¢ apiece. What did they get for them?

7. Ted and Paul like to go camping. They bought a tent together for \$9.80. How much should each pay? How much should each pay for supplies for a week's trip that cost \$5.56.

8. Tom, Frank, and Will like to go fishing. They bought together some fishing tackle that cost \$1.80. How much should each pay?

9. Will caught a 9 lb. fish and sold it at 17¢ a lb. Frank caught a 7 lb. fish and sold it at 15¢ a lb. Tom caught two 3 lb. fish and sold them at 13¢ a lb. What did each boy get for his fish?

Some girls like to do these things.

1. Ida likes to go automobile riding. One month she took these trips:

27 miles to her cousin's house and back.

36 miles to the seashore and back.

48 miles to a county fair and back.

54 miles to the woods and back.

How far did she go in all?

2. Bess likes to sew. She made 12 pairs of curtains for her mother. How many curtains did she make in all? She used 6 yards of net for each pair of curtains. How many yards in all did she use?

3. Nell likes to make candy and sell it. Here are the amounts she made one week and the prices at which she sold each:

4 lb. at 45¢ a lb.

3 lb. at 37¢ a lb.

5 lb. at 60¢ a lb.

How much did she get for all the candy?

4. Julia likes to visit her grandmother. She spent 45 days there on one visit. How many weeks was she there?

5. Maud sells eggs. One week she sold 4 dozen at 39¢ a dozen. Another week she sold 6 dozen at 37¢ a dozen. How much did she get for them?

6. Kate and Mary like to pick blackberries. One day they picked 8 qt. They sold them at 15¢ a qt. Another day they picked 9 qt. and sold them at 16¢ a qt. How much should each get?

7. Jane likes to read. One day she said, "I have read thousands of pages this month." Here is what she had read:

One book of 198 pages.

One book of 339 pages.

One book of 271 pages.

One book of 256 pages.

One book of 178 pages.

How many pages had Jane read?

1. Tell as fast as you can the number of 6's in each of these numbers:

42, 30, 18, 36, 54, 24, 48, 12, 60, 6.

2. Tell as fast as you can the number of 7's in each of these numbers:

28, 49, 14, 35, 63, 21, 42, 56, 70, 7.

3. Tell as fast as you can the number of 8's in each of these numbers:

32, 56, 40, 24, 64, 48, 16, 72, 80, 8.

4. Tell as fast as you can the number of 9's in each of these numbers:

27, 54, 18, 45, 63, 36, 72, 90, 81, 9.

5. Multiply each number in line A by each number in line B.

A. 6, 1, 9, 4, 2, 8, 5, 3, 7, 0.

B. 9, 2, 8, 5, 3, 0, 7, 1, 4, 6.

6. Divide each number in line A by each number in line B.

A. 15, 21, 34, 45, 63, 26, 47, 32, 51, 41, 16, 29.

B. 6, 7, 4, 9, 3, 8, 5, 2.

7. From each number in line A, subtract each number in line B.

A. 15, 17, 21, 24, 19, 27, 30, 22, 25, 18, 23, 29.

B. 3, 9, 6, 4, 10, 8, 7, 5, 2, 11.

1. How many chickens did Dick have at the end of a summer when he began the summer with 197 and raised 245? How many would he have had if he had raised 516? 167? 329? 588? 454?

2. Add 496 to each of these numbers:

192 269 583 471 746 954 835 627 318

3. How many chickens had Dick left from 500 when he sold 198? How many when he sold 271? 365? 409? 354? 483? 246?

4. Subtract each of these numbers from 712:

491 658 567 283 345 174 636 529

5. Subtract 496 from each of these numbers:

700 648 512 809 957 761 609 542

6. How many pieces of candy would you need for 56 children when you wish to give each child 6 pieces? How many would you need for 75 children? for 84 children? for 39 children? for 68 children? for 47 children? for 93 children?

7. Multiply each of these numbers first by 7, then by 8, then by 9:

193 938 484 827 275 562 656 749

8. How many weeks and days have you been in the country when you have been there 79 days? How many when you have been there 58 days? 116 days? 207 days? 95 days? 43 days? 110 days?

Anna's Uncle sent her a picture of an old English Church. This writing was on it. It tells the year the church was built. The letters used are called Roman numerals. Where have you seen Roman numerals used?



Anna wants to know how to read Roman numerals. It is easy to learn.

1. There are only seven letters used. This is what each means in Arabic or Hindu numerals.

I	V	X	L	C	D	M	Roman numerals
1	5	10	50	100	500	1000	Arabic or Hindu numerals

2. Repeating a letter repeats its value.

II means 1 and 1, or 2.

XX means 10 and 10, or 20.

CC means 100 and 100, or 200.

3. Tell what these mean: III, XXX, CCC.

4. When a letter of larger value comes first, the values of both letters are to be added.

VI means 5 and 1, or 6.

XI means 10 and 1, or 11.

XV means 10 and 5, or 15.

LX means 50 and 10, or 60.

5. Tell what these mean: VII, VIII, XII, CX.

6. When a letter of smaller value comes first, the value of the smaller is to be taken from the value of the larger.

IV means 1 taken from 5, or 4.

IX means 1 taken from 10, or 9.

XC means 10 taken from 100, or 90.

7. Tell what these mean: XL, XC, XCIV.

8. Write in Arabic numerals: XLV, XC, XL, XIV.

9. Write the Roman numerals to thirty.

10. Write in Roman numerals these numbers:

35 72 49 56 90 120 240

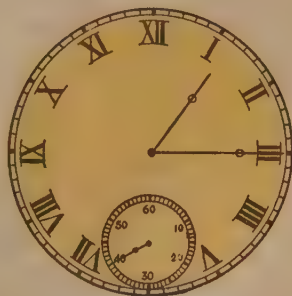
11. What year is shown in the picture on page 174?

USING ROMAN AND ARABIC NUMERALS

Look at this watch face.

The Roman numerals mark the minutes.

The Arabic numerals mark the seconds.



Sec. means second or seconds.

Min. means minute or minutes.

60 sec. = 1 min. 60 min. = 1 hr.

It is 15 min. and 40 sec.
after 1 o'clock

1. How long does it take the second hand to pass from 10 to 30? How long from 20 to 50?

2. How many minutes does it take the minute hand of the watch to go from I to II?

3. How many times does the second hand go around the circle while the minute hand is passing from I to II? How many seconds in 5 minutes?

A.M. means before noon. **P.M.** means after noon.

1. John wants to visit his grandmother. There are 3 trains a day to her home. One leaves John's city at 10:15 A.M. and arrives at 3:47 P.M. of the same day. Another leaves at 11:25 A.M. and arrives at 4:54 P.M. The third leaves at 12:18 P.M. and arrives at 6:02. Which train will get John to his grandmother's house in the shortest time?

2. I left home at 1:24 P.M. and reached John's house at 7:35 P.M. How long did the trip take?

3. Train No. 17 on a railroad leaves Chicago at 8:30 A.M. and arrives at Kansas City at 9:30 P.M. of the same day. How many hours does it take?

4. Every Sunday this sign is hung in the window of a dairy, "Closed from 9 A.M. until 5 P.M." How many hours is the dairy closed on Sunday?

5. Jack's father is a policeman. He does not always work at the same hours. One month he works from 6 A.M. until 2 P.M. The next month he works from 10 P.M. until 6 A.M. The next month he works from 2 P.M. until 10 P.M. How many hours does he work each day during each month?

6. Frank goes to school from 9 A.M. to 11:30 A.M. and from 12:30 P.M. to 2:30 P.M. His older brother goes to school from 8:30 A.M. to 1 P.M. How many hours is each boy in school?

	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.		Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.		Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	
Jan.	3	4	5	6	7	8	9	May	2	3	4	5	6	7	8	Sept.	5	6	7	8	9	10	11	
	10	11	12	13	14	15	16		9	10	11	12	13	14	15		12	13	14	15	16	17	18	
	17	18	19	20	21	22	23		16	17	18	19	20	21	22		19	20	21	22	23	24	25	
	24	25	26	27	28	29	30		23	24	25	26	27	28	29		26	27	28	29	30			
	31								30	31						Oct.						1	2	
Feb.	1	2	3	4	5	6		June		1	2	3	4	5			3	4	5	6	7	8	9	
	7	8	9	10	11	12	13		6	7	8	9	10	11	12		10	11	12	13	14	15	16	
	14	15	16	17	18	19	20		13	14	15	16	17	18	19		17	18	19	20	21	22	23	
	21	22	23	24	25	26	27		20	21	22	23	24	25	26		24	25	26	27	28	29	30	
	28								27	28	29	30				Nov.	31							
Mar.	1	2	3	4	5	6		July				1	2	3			1	2	3	4	5	6		
	7	8	9	10	11	12	13		4	5	6	7	8	9	10		7	8	9	10	11	12	13	
	14	15	16	17	18	19	20		11	12	13	14	15	16	17		14	15	16	17	18	19	20	
	21	22	23	24	25	26	27		18	19	20	21	22	23	24		21	22	23	24	25	26	27	
	28	29	30	31					25	26	27	28	29	30	31		28	29	30					
April					1	2	3	Aug.	1	2	3	4	5	6	7	Dec.					1	2	3	4
	4	5	6	7	8	9	10		8	9	10	11	12	13	14		5	6	7	8	9	10	11	
	11	12	13	14	15	16	17		15	16	17	18	19	20	21		12	13	14	15	16	17	18	
	18	19	20	21	22	23	24		22	23	24	25	26	27	28		19	20	21	22	23	24	25	
	25	26	27	28	29	30			29	30	31						26	27	28	29	30	31		

Will buys a newspaper every morning for his father. He pays 3¢ for a daily paper and 10¢ for one on Sunday. Paul's father gets the same paper from a carrier. He pays 65¢ a month for the daily paper and 10¢ for each Sunday paper.

1. Look at the calendar and tell how much each will pay for newspapers in May; how much in June?

2. How much more will each pay for papers in July than in Nov.? In which months will Will's father pay more for newspapers than Paul's father?

3. Compare the number of Sundays in Aug. and in Dec. In which month will newspapers cost more?

1. Tell the months of the year in order.
2. Tell what each of these stands for: Jan., Feb., Mar., Apr., Aug., Sept., Oct., Nov., Dec.
3. Which months have 30 days? Which ones have 31 days?
4. On what day of the month does Christmas come?

5. When school closes on June 18 and reopens on Sept. 6, how long a vacation have the children?

Think, "How many days of June are left for vacation? How many days in July? How many in August? How many in September before school reopens? How many in all?"

6. Decoration day comes on May 30. John's father took him to visit his grandmother on Decoration day. He returned for him on July 4. How many days did John spend at his grandmother's?

7. When Thanksgiving day comes on November 26, how many days is it from Thanksgiving to Christmas?

8. St. Valentine's day comes on Feb. 14. How many weeks is it from Feb. 1 to Feb. 14? How many days is it from St. Valentine's day to Washington's birthday?

9. How many days from Washington's birthday to Decoration day?

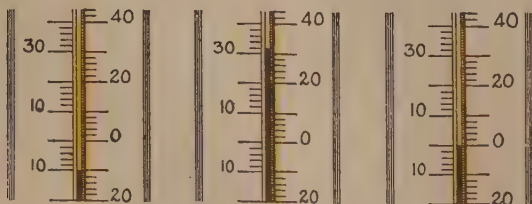
1. Frank wanted to go skating on the pond. He said, "I wonder if the pond is frozen." His mother looked at the thermometer on the porch and said, "No. It is not freezing yet."

Where is the mercury in the thermometer when it is cold enough to freeze water?

How much colder than "freezing" is it when the mercury is at *zero*?

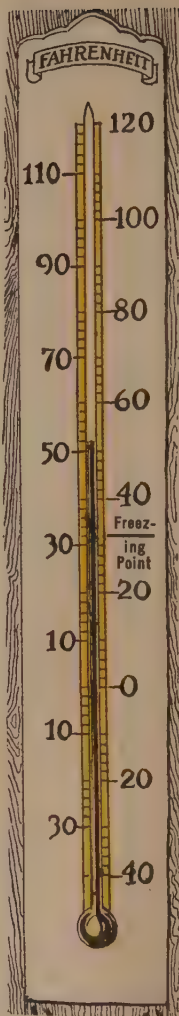
Would the pond be safe for skating when the mercury is at zero? When it is 10 degrees above zero?

2. Frank watched the thermometer every day during the winter. Here is how it looked on 3 different days.



When it was at zero, Frank's little sister could not go to school. Which day was that?

When it was 10 degrees below zero, the water pipes froze. Which day was that?



When it was 32 degrees above zero, the boys went skating. Which day was that?

3. Frank said, "If 32 is freezing, what is boiling?" Frank's mother showed him this thermometer. She uses it for cooking. She said water boils at 212 degrees. How many degrees between freezing point and boiling point?

4. One summer day it was 102 degrees. Frank said, "It is boiling hot." How far was it from boiling? Is 102 degrees very warm?

5. The temperature in a schoolroom should be 68 degrees. Is it too cold or too hot and how much when the thermometer is 72 degrees? 64 degrees? 58 degrees?

6. Frank's little sister was sick, and his mother put this little thermometer in her mouth. When she took it out, the mercury was at 101 degrees. His mother said that his sister had fever. The mercury should have been a little above 98 degrees. About how many degrees of fever had she?

7. How many degrees of fever has a boy when his temperature is 104 degrees?



8. Here are the midday temperatures for the first day of each of these months in Frank's city:

Jan.	April	July	Oct.
2 below	56	97	78

At which time do you think the temperature was most comfortable?

9. The coldest day in July for that year was 80 degrees, the warmest was 101. How many degrees of difference were there during the month?

10. The coldest day in January was 14 below zero; the warmest was 42 above. How many degrees of difference were there during the month?

11. The coldest day in April was 32 degrees; the warmest was 78. How many degrees of difference were there during the month?

12. The coldest day in October was 62 degrees; the warmest was 84 degrees. How many degrees of difference were there during the month?

REVIEW

Write the differences.

101	212	206	141	251	304	111
<u>65</u>	<u>89</u>	<u>109</u>	<u>75</u>	<u>198</u>	<u>265</u>	<u>89</u>
1068	3501	8175	1019	6504	279	206
<u>479</u>	<u>2698</u>	<u>4629</u>	<u>846</u>	<u>2938</u>	<u>184</u>	<u>197</u>

Write the sums. Prove your answers.

1.	2.	3.	4.	5.	6.
497	209	958	647	545	474
176	994	435	280	381	566
569	380	913	486	769	690
623	456	692	592	327	815
<u>838</u>	<u>561</u>	<u>709</u>	<u>678</u>	<u>138</u>	<u>189</u>

PLAYING STORE

The Fourth Grade children have a play store. Here are the amounts of some sales slips and the amounts of money given by their customers.

How fast and how correctly can you make change for each?

Amt. of Sales Slip	Money Given	Amt. of Sales Slip	Money Given
12¢	Half dollar	72¢	One dollar
35¢	Dollar	84¢	One dollar
14¢	Quarter	46¢	Half dollar
76¢	Dollar	39¢	Half dollar
48¢	Dollar	16¢	Quarter
26¢	Half dollar	11¢	Quarter
37¢	Half dollar	58¢	One dollar
16¢	Quarter	63¢	One dollar
18¢	Quarter	79¢	One dollar
45¢	One dollar	83¢	One dollar

Tell the amount to be written on the sales slip when the customer buys:

1. 3 articles at 17¢ each 5 articles at 34¢ each
 6 articles at 12¢ each 2 articles at 29¢ each
 9 articles at 21¢ each 6 articles at 38¢ each
 8 articles at 16¢ each 4 articles at 15¢ each
2. 1 article at 75¢ and 1 at 69¢
 1 article at 58¢ and 1 at 42¢
 1 article at 69¢ and 1 at 9¢
 1 article at 34¢ and 1 at 17¢
 1 article at 12¢ and 1 at 36¢
3. $\frac{1}{2}$ lb. at 60¢ a lb. and $\frac{1}{2}$ doz. at 52¢ a doz.
 $\frac{1}{2}$ lb. at 94¢ a lb. and $\frac{1}{2}$ doz. at 48¢ a doz.
 $\frac{1}{2}$ lb. at 38¢ a lb. and $\frac{1}{2}$ doz. at 54¢ a doz.
 $\frac{1}{2}$ lb. at 62¢ a lb. and $\frac{1}{2}$ doz. at 46¢ a doz.

REVIEW

Write the differences. Prove your answers.

5068	2507	4661	1334	9675	9891	9409
<u>3587</u>	<u>1748</u>	<u>3925</u>	<u>1258</u>	<u>1747</u>	<u>6909</u>	<u>2530</u>
9853	6584	3740	7743	4265	8732	5328
<u>9698</u>	<u>5927</u>	<u>1948</u>	<u>2748</u>	<u>1897</u>	<u>1838</u>	<u>2966</u>
7524	9741	6271	6202	9353	7886	9813
<u>1539</u>	<u>4593</u>	<u>1638</u>	<u>4937</u>	<u>5877</u>	<u>7498</u>	<u>4835</u>

ADDITION

648 is the first *addend*.

935 is the second *addend*.

467 is the third *addend*.

2050 is the *sum*.

Use each of the numbers below in order for the third addend. Use the first and second addend shown above. Before adding, tell which sum will be the largest. Tell which will be the smallest. Find the sums.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
467	856	714	659	384	758	904

SUBTRACTION

9021 is the *minuend*.

4937 is the *subtrahend*.

4084 is the *difference*.

Use the above minuend. Use each of the numbers below in order for the subtrahend. Before subtracting, tell which difference will be the largest. Tell which will be the smallest. Find the differences.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
4937	6843	5968	3709	7546	4938	6541

Write the sums.

$$1467 + 3965$$

$$6543 + 8469$$

+ means "*plus*."

Write the differences.

$$7018 - 3471$$

$$6935 - 2684$$

- means "*less*."

MULTIPLICATION

735 is the *multiplicand*. It is the number to be

6 is the *multiplier*. multiplied.

4410 is the *product*.

Use the above multiplicand. Use the numbers below in order for the multipliers. Before multiplying tell which product will be the largest. Tell which will be the smallest. Find the products.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
6	4	8	5	2	7	9	3

DIVISION

1973...3

4 $\overline{)7895}$ is the *dividend*. 4 is the *divisor*. 1973 is the *quotient*. 3 is the *remainder*.

Use the above dividend. Use the numbers below in order for the divisors. Before dividing, tell which quotient will be the largest. Tell which will be the smallest. Find the quotients and remainders.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
4	6	3	9	7	8	5	2

Write the products.

$$684 \times 7$$

$$396 \times 5$$

$$461 \times 9$$

Write the quotients.

$$7689 \div 4$$

$$3548 \div 7$$

$$6913 \div 9$$

$\times$ means "times" or
"multiplied by."

$\div$ means "divided by."

Nell, Will, Mary, and Paul made problems from numbers. This is how they did it.

Mary wrote "5¢" and "30¢" and the sign " $\div$."

Nell asked, "How many 5¢ loaves of bread can you buy for 30¢?"

Will wrote, "6¢" and "8 lb." and the sign " $\times$."

Paul asked, "What will 8 lb. of butter cost at 6¢ a pound?" Will said, "That is not a true problem. You cannot buy butter at 6¢ a lb." Then Paul asked, "What will 8 lb. of tomatoes cost at 6¢ a pound?"

Make an easy problem for each of these. Be sure to tell things that are true. Give the answer to each problem.

1. 16¢	4 yd.	$\times$	2. 25¢	4 days	$\times$
3. \$1.50	5 boys	$\div$	4. 16 cans	9¢	$\times$
5. 2 ft.	3 yd.	—	6. 2 dozen	75¢	$\times$
7. \$1.65	\$2.98	+	8. \$5.00	\$3.47	—
9. 15 ft.	9 ft.	—	10. 25 ft.	16 ft.	+
11. \$1.20	\$10.80	+	12. \$.45	\$2.70	—
13. \$20.56	\$4.85	—	14. 25 boxes	5¢	$\times$
15. 27 mi.	46 mi.	+	16. \$9.40	2	$\div$
17. \$1.80	3	$\div$	18. 9 lb.	17¢	$\times$
19. 56 days	7	$\div$	20. 196 pages	210 pages	+
21. 396	124	—	22. 6 in.	36 in.	$\div$
23. 17 yd.	3 yd.	$\div$	24. 46 children	29 children	—

Harry put 25 stamps on each page of his stamp book. He filled 27 pages. He wanted to know how many stamps he had in all without counting each one.

Here is the way he found out.

He said " $7 \text{ 5's} = 35$." He wrote only the 5
25 of 35 below the 7 in the multiplier.

27 He said " $7 \text{ 2's} = 14$." He added the 3 of
175 35 to 14 and wrote 17.

50 He said " $2 \text{ 5's} = 10$." He wrote only the 0
675 of 10 below the 2 in the multiplier.

He said " $2 \text{ 2's} = 4$." He added the 1 of 10 to 4. He wrote 5. He read the vacant place under the 5 as zero and added 500 and 175.

Jay put only 17 stamps on each page of his book. He filled 34 pages. Had he as many stamps as Harry?

Multiply 17 by 4. Write the 8 below the 4
17 you are multiplying by.

34 Multiply 17 by 3. Write the 1 below the 3
68 you are multiplying by.

51 Read the vacant place under the 8 as zero.
578 Add 510 and 68.

1. Which saved more and how many more:

a boy who saved 26 stamps a day for 19 days
or, a boy who saved 55 stamps a day for 9 days?

2. Which holds more, and how many more:

37 boxes of cakes with 25 in a box

or, 59 boxes of cakes with 14 in a box?

3. Which went farther, and how much farther:

a train that went 38 miles an hour for 27 hours

or, a train that went 49 miles an hour for 16 hours?

4. Which holds more, and how many more:

19 baskets of peaches holding 75 each

or, 38 baskets of peaches holding 45 each?

5. Which is heavier, and how much heavier:

16 boxes weighing 35 lb. each

or, 27 boxes weighing 19 lb. each?

6. Which boy walked farther, and how much farther:

a boy who walked 16 blocks each 240 ft. long

or, a boy who walked 9 blocks each 580 ft. long?

7. One boy worked 17 practice examples every day for 19 da. Another boy worked 28 practice examples every day for 12 da.

Which boy worked more examples? How many more did he work?

8. Frank had a garden 46 ft. long and 24 ft. wide. Tom had one 68 ft. long and 17 ft. wide. Frank said his was not large enough and wanted to trade with Tom. Would Frank gain by the trade, and how much?

1. Multiply 274 by 20.

Think " $0 \times 274 = 0$." Write 0 below the 0
274 in the multiplier.

20 Think " $2 \times 4 = 8$." Write the 8 below the
5480 2 in the multiplier.

Think " $2 \times 7 = 14$." Write the 4.

Think " $2 \times 2 = 4$. 4 and 1 = 5." Write the 5.

2. Find the products.

649	468	965	468	569	432	691
<u>30</u>	<u>20</u>	<u>40</u>	<u>60</u>	<u>50</u>	<u>70</u>	<u>80</u>

3. Multiply 678 by 21.

Think " $1 \times 678 = 678$." Write 678. Be
678 sure to write the 8 below the 1 in the mul-
21 tiplier.

678 When you multiply by the 2, be sure to
1356 begin to write your product below the 2 of
14238 the multiplier.

4. Find the products.

679	456	568	769	256	864	596
<u>31</u>	<u>41</u>	<u>21</u>	<u>31</u>	<u>51</u>	<u>21</u>	<u>21</u>
516	524	236	568	691	485	369
<u>17</u>	<u>19</u>	<u>13</u>	<u>12</u>	<u>16</u>	<u>14</u>	<u>15</u>

1. There are 37 children in a fourth grade room, who are going to spend a day in the woods. They planned to buy their lunch together. Each one brought 25 cents. How much had they to spend?

They would have $37 \times 25\text{¢}$.

Put a \$ and a decimal point to show dollars and cents.

2. The train fare to the woods was 28 cents apiece. What did the fare for all cost?

The fare for all cost $37 \times 28\text{¢}$.

Put a \$ and a decimal point to show dollars and cents.

3. The children brought 16 boxes of cakes. There were 24 cakes in each box. How many did they have in all?

4. Each child ate 3 sandwiches. How many sandwiches did it take for all of them?

5. They ate 2 oranges apiece. How many oranges did they eat?

6. They reached the woods at 10:30 A. M. and stayed until 4:35 P. M. How long were they there?

7. On the way home they passed a beautiful garden. A sign on it said that it was 95 feet long and 58 feet wide. Bob said, "There must be 5000 sq. ft. in it." Multiply 95 by 58 and find out how far wrong Bob was.

To multiply any number by 10, write a 0 to the right of the number.

1. Write the missing numbers.

$9 \times 10 = \underline{\quad}$	$9 \text{ 10's} = \underline{\quad}$	$8 \times \underline{\quad} = 80$
$8 \times 10 = \underline{\quad}$	$8 \text{ 10's} = \underline{\quad}$	$10 \times \underline{\quad} = 100$
$10 \times 10 = \underline{\quad}$	$10 \text{ 10's} = \underline{\quad}$	$100 \times \underline{\quad} = 1000$
$80 \times 10 = \underline{\quad}$	$80 \text{ 10's} = \underline{\quad}$	$90 \times \underline{\quad} = 900$
$90 \times 10 = \underline{\quad}$	$90 \text{ 10's} = \underline{\quad}$	$50 \times \underline{\quad} = 500$
$100 \times 10 = \underline{\quad}$	$100 \text{ 10's} = \underline{\quad}$	$5 \times \underline{\quad} = 50$

To multiply any number by 100, write 00 to the right of the number.

2. Write the missing numbers.

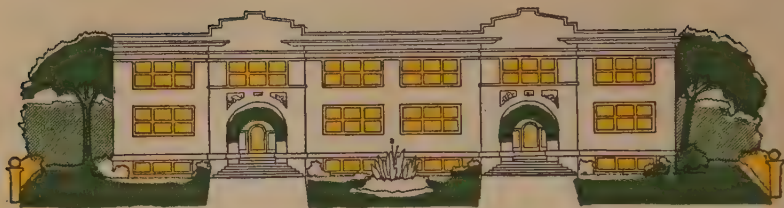
$5 \times 100 = \underline{\quad}$	$5 \times \underline{\quad} = 500$	$9 \text{ 100's} = \underline{\quad}$
$5 \times 200 = \underline{\quad}$	$5 \times \underline{\quad} = 1000$	$10 \text{ 100's} = \underline{\quad}$
$10 \times 200 = \underline{\quad}$	$20 \times \underline{\quad} = 2000$	$6 \text{ 200's} = \underline{\quad}$
$80 \times 100 = \underline{\quad}$	$90 \times \underline{\quad} = 9000$	$8 \text{ 300's} = \underline{\quad}$
$80 \times 200 = \underline{\quad}$	$60 \times \underline{\quad} = 6000$	$5 \text{ 200's} = \underline{\quad}$
$90 \times 200 = \underline{\quad}$	$30 \times \underline{\quad} = 6000$	$30 \text{ 100's} = \underline{\quad}$

3. State the products.

98	650	469	68	46	79	84	165	458	97
<u>10</u>	<u>10</u>	<u>10</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>10</u>	<u>100</u>	<u>100</u>	<u>10</u>

4. Write and then read the products.

65	48	95	650	496	500	600	400	307
<u>200</u>	<u>100</u>	<u>10</u>	<u>100</u>	<u>200</u>	<u>200</u>	<u>10</u>	<u>100</u>	<u>100</u>



1. This is the picture of a city schoolhouse and grounds. From the west end of the ground to the east end is 330 feet. The building and grounds cover an entire block. How many feet in 16 blocks of this length?

$$5280 \text{ ft.} = 1 \text{ mile (mi.)}$$

2. Tom can run a mile in 15 minutes. Find out how long it takes you to go a mile when you walk fast.

3. The best record made by an ice skater in the United States is a mile in a little less than 3 minutes. How many feet did he skate in 1 minute? About how far can you walk in a minute?

4. A trolley car can go a mile in 5 minutes. How many miles can it go in an hour?

5. A boy's school has a $\frac{1}{4}$ mile running track. How many feet in the track?

6. In the city where Sam lives the blocks are about 400 ft. long. Sam lives 8 blocks from school. Does Sam walk a mile in going and returning to school? How many feet does he walk?

When the wind is blowing from 4 to 5 miles an hour, we call it a gentle breeze; when it is blowing from 30 to 35 miles, we call it a high wind; and when it is blowing from 60 to 70 miles, we call it a great storm.

1. Tom said, "The wind is blowing a mile a minute." At that rate, if it blew your hat off, how many feet would it carry it in a minute?

2. When the wind is blowing a gentle breeze, about how long would it take it to carry your hat a mile?

Could you catch up with it? How many feet can you run in a minute?

3. The tallest building in the United States is the Woolworth Building in New York City. It is 51 stories high and is 750 ft. tall. How much less than a mile high is it?

4. A very high mountain in North America is Mt. McKinley, 20,300 ft. high. How much less than 4 miles high is it?

5. An airplane went up 24,606 feet. How much higher than Mt. McKinley did it go? About how many miles high did it go?

6. A gas balloon went up 28,750 ft. How many feet higher than the airplane did it go? Did it go a mile higher?

7. Six passengers went up 9,514 ft. in a dirigible. How many feet higher than a mile did they go?

8. An airplane went up 24,408 ft. How much higher than 4 miles did it go?

9. Another airplane went up 17,441 feet. Did it go up $3\frac{1}{2}$ miles?

10. A duck can fly 90 miles an hour, a hawk 150 miles an hour, and a crow 25 miles an hour. At these rates how far can each fly in 3 hr.?

11. The hawk will fly how much farther than a crow in 4 hr.?

REVIEW

Write the sums.

1.	2.	3.	4.	5.	6.
497	209	958	647	545	474
176	994	435	280	381	566
569	380	913	486	769	690
623	456	692	592	327	815
<u>838</u>	<u>561</u>	<u>709</u>	<u>678</u>	<u>138</u>	<u>189</u>
7.	8.	9.	10.	11.	12.
738	278	648	154	318	514
429	892	126	891	563	720
365	506	561	389	635	199
506	764	834	616	147	865
<u>179</u>	<u>410</u>	<u>397</u>	<u>445</u>	<u>292</u>	<u>907</u>

9,000 is read in words nine thousand.

90,000 is read in words ninety thousand.

900,000 is read in words nine hundred thousand.

1. Here are the numbers of people living in some of the large cities of the United States. Read each.

Detroit, Mich. 993,739	Boston, Mass. 747,923
Cleveland, O. 796,836	Baltimore, Md. 733,826
St. Louis, Mo. 773,000	Pittsburgh, Pa. 588,193

2. These are some of the high mountains in the United States. Write the height of each in words.

Mt. McKinley (Alaska)	20,300 ft. in height.
Mt. Whitney (California)	14,501 ft. in height.
Mt. Ranier (Washington)	14,408 ft. in height.
Mt. Ebert (Colorado)	14,402 ft. in height.
Pike's Peak (Colorado)	14,108 ft. in height.

3. Can you read these facts correctly?

525 birds ate about 46,000 weed seeds for their breakfast.

14,478 hens laid 209,457 eggs in one month.

The cost of our school was \$167,849.

In 1919 there were 33,271 Chinese in the United States.

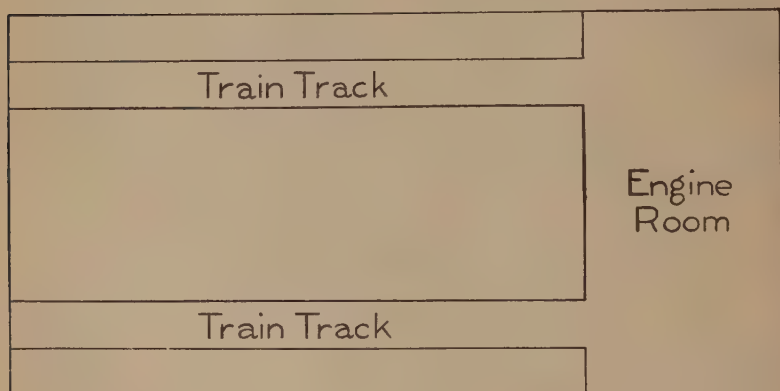
\$100 are equal to 10,000 cents.

3 hours are equal to 10,800 seconds.

1 mile equals 63,360 inches.

Tom would like to build a playhouse and a workshop. Here is the plan of the room he wants for his electric train. Each inch stands for 4 feet.

Each — stands for 1 foot.



1. How long is his train room to be? How wide is it to be? How many square feet of space will it cover? How many square feet of space will the two train tracks cover?

How many square feet of space will the engine room cover?

The number of square feet of floor space of a room is called its area.

2. Tom's workshop is to be 10 ft. long and 6 ft. wide. Use the scale given and draw the plan of the workshop. How many square feet in the area of the floor?

3. His work bench is to be 7 ft. by 3 ft. 7 ft. by 3 ft. means 7 ft. long and 3 ft. wide. How many square feet of space in the top of the bench?

4. Tom wants a theatre 16 ft. by 9 ft. How many square feet of space will it cover?

5. The stage is to be 9 ft. by 4 ft. How many square feet in the area covered by the stage?

6. Mark on your schoolroom floor a space 9 ft. long and 4 ft. wide. Is that a large enough space for a stage? How many children could play on it at one time?

7. Tom wants a room for his butterflies. It is to be 6 ft. long and 3 ft. wide. Draw the plan.

How many sq. ft. of space will it cover?

8. It is to have a butterfly case 6 ft. long and 1 ft. wide in it. How much floor space will the case cover?

9. Draw the plan of a playhouse you would like to have.

Let this line ——— stand for 3 feet.

Tell how many square feet of floor space each room will cover.

1. Find the products.

<u>126</u>	<u>378</u>	<u>438</u>	<u>654</u>	<u>568</u>	<u>946</u>	<u>579</u>
<u>27</u>	<u>35</u>	<u>46</u>	<u>39</u>	<u>58</u>	<u>49</u>	<u>46</u>
<u>318</u>	<u>852</u>	<u>198</u>	<u>629</u>	<u>934</u>	<u>279</u>	<u>435</u>
<u>19</u>	<u>52</u>	<u>27</u>	<u>36</u>	<u>85</u>	<u>89</u>	<u>27</u>

2. Divide the numbers in each column first by 9, then by 8, and then by 7. Say the answers.

a.	b.	c.	d.	e.	f.	g.	h.
11	21	31	41	51	61	71	81
13	23	33	43	53	63	73	83
17	25	35	45	55	65	75	85
19	27	37	47	57	67	77	87

3. Divide each of these numbers by 8. Write the quotients and remainders.

4679	2456	3568	6769	4256	7864	9596
------	------	------	------	------	------	------

4. Write the sums. Prove your answers.

1.	2.	3.	4.	5.	6.
4738	5278	4648	2154	6318	2514
2429	7892	6126	6891	2563	6720
3365	6506	9561	9389	9635	9199
6506	3764	3834	4616	8147	7865
<u>9179</u>	<u>4410</u>	<u>7397</u>	<u>3445</u>	<u>4292</u>	<u>1907</u>

1. Multiply these numbers by 10. Write your answers.

7 9 14 25 6 11 19 34 21 48 76 95

2. Multiply these numbers by 10. Tell your answers without writing.

6 4 12 10 9 14 20 35 27 18 26 42

3. Multiply these numbers by 100. Write and then read your answers.

6 5 14 16 21 45 9 8 13 75 68 32

4. How many sq. ft. in a lot 200 ft. long and 45 ft. wide?

Think, " $2 \times 45 = 90$. $200 \times 45 = 9000$."

5. Tell the answers. Do not use a pencil.

How many sq. ft. in a path

(1) 100 ft. long and 9 ft. wide?

(2) 100 ft. long and 8 ft. wide?

(3) 200 ft. long and 4 ft. wide?

(4) 200 ft. long and 6 ft. wide?

(5) 60 ft. long and 8 ft. wide?

(6) 80 ft. long and 7 ft. wide?

6. Write the answers.

How many sq. ft. in a lot

(1) 200 ft. long and 25 ft. wide?

(2) 100 ft. long and 36 ft. wide?

(3) 100 ft. long and 40 ft. wide?

(4) 200 ft. long and 45 ft. wide?

1. Multiply 378 by 250.

Think, " $0 \times 378 = 0$." Write 0 below the
378 0 in the multiplier.

250 Think, " $5 \times 8 = 40$." Write the 0 below
18900 the 5 in the multiplier.

756 Think, " $5 \times 7 = 35$. $35 + 4 = 39$." Write
94500 the 9.

Think, " $5 \times 3 = 15$. $15 + 3 = 18$." Write the 18.

Think, " $2 \times 8 = 16$." Write the 6 below the 2 in
the multiplier.

Think, " $2 \times 7 = 14$. $14 + 1 = 15$." Write the 5.

Think, " $2 \times 3 = 6$. $6 + 1 = 7$." Write the 7.

In adding read the 2 vacant places as zeros.

2. Find the products.

<u>659</u>	<u>425</u>	<u>378</u>	<u>571</u>	<u>754</u>	<u>856</u>	<u>198</u>	<u>497</u>
<u>230</u>	<u>160</u>	<u>240</u>	<u>320</u>	<u>130</u>	<u>270</u>	<u>210</u>	<u>140</u>
<u>236</u>	<u>134</u>	<u>357</u>	<u>168</u>	<u>457</u>	<u>975</u>	<u>498</u>	<u>216</u>
<u>570</u>	<u>890</u>	<u>560</u>	<u>980</u>	<u>780</u>	<u>490</u>	<u>560</u>	<u>640</u>

3. Multiply 262 by 304.

Multiply 262 by 4. Write the 8 of the
262 product below the 4 in the multiplier.

304 Think, " $262 \times 0 = 0$." Write the 0 below
1048 the 0 in the multiplier.

7860 Multiply 262 by 3. Write the 6 of the
79648 product below the 3 of the multiplier.

1. Find the products. Check your answers by using the multiplier as a multiplicand and the multiplicand as multiplier.

<u>549</u>	<u>732</u>	<u>658</u>	<u>732</u>	<u>560</u>	<u>590</u>	<u>650</u>	<u>780</u>
<u>206</u>	<u>302</u>	<u>404</u>	<u>205</u>	<u>107</u>	<u>204</u>	<u>905</u>	<u>506</u>

2. Write the products as rapidly as you can. How many minutes did it take you?

<u>789</u>	<u>475</u>	<u>694</u>	<u>384</u>	<u>493</u>	<u>684</u>	<u>378</u>	<u>862</u>
<u>7</u>	<u>9</u>	<u>3</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>8</u>	<u>2</u>

3. How rapidly can you write these products?

<u>423</u>	<u>156</u>	<u>759</u>	<u>460</u>	<u>795</u>	<u>958</u>	<u>756</u>	<u>486</u>
<u>70</u>	<u>300</u>	<u>301</u>	<u>801</u>	<u>102</u>	<u>300</u>	<u>403</u>	<u>642</u>

4. Write the products.

<u>324</u>	<u>629</u>	<u>483</u>	<u>651</u>	<u>785</u>	<u>918</u>	<u>639</u>	<u>492</u>
<u>57</u>	<u>69</u>	<u>19</u>	<u>87</u>	<u>81</u>	<u>95</u>	<u>78</u>	<u>51</u>

5. Write the products. Put \$ and . to show dollars and cents.

<u>\$6.75</u>	<u>\$5.84</u>	<u>\$6.00</u>	<u>\$7.59</u>	<u>\$1.19</u>	<u>\$2.38</u>	<u>\$3.52</u>
<u>409</u>	<u>37</u>	<u>94</u>	<u>68</u>	<u>80</u>	<u>68</u>	<u>49</u>

<u>\$5.06</u>	<u>\$9.17</u>	<u>\$8.75</u>	<u>\$9.02</u>	<u>\$4.78</u>	<u>\$9.00</u>	<u>\$6.50</u>
<u>68</u>	<u>30</u>	<u>37</u>	<u>60</u>	<u>80</u>	<u>207</u>	<u>105</u>

How many sq. ft. in a playground 692 ft. long and 243 ft. wide.

Multiply 692 by 243 to find out.

$\begin{array}{r} 692 \\ 243 \\ \hline 2076 \\ 2768 \\ 1384 \\ \hline 168156 \end{array}$	Multiply 692 by 3. Write the 6 of the product below the 3 of the multiplier. Multiply 692 by 4. Write the 8 of the product below the 4 of the multiplier. Multiply 692 by 2. Write the 4 of the product below the 2 of the multiplier. In adding read vacant places as zeros.
---	---

Check your work by using 243 as the multiplicand and 692 as the multiplier.

Multiply 347 by 268.

$\begin{array}{r} 347 \\ 268 \\ \hline 2776 \\ 2082 \\ 694 \\ \hline 92996 \end{array}$	Remember to begin to write your first product below the 8 of the multiplier. Begin to write your second product below the 6 of the multiplier. Begin to write your third product below the 2 of the multiplier. Add products. Read vacant places as zeros.
---	--

Find the products.

<u>329</u>	<u>568</u>	<u>697</u>	<u>465</u>	<u>786</u>	<u>684</u>	<u>275</u>	<u>184</u>
<u>486</u>	<u>845</u>	<u>238</u>	<u>924</u>	<u>137</u>	<u>369</u>	<u>359</u>	<u>289</u>

<u>259</u>	<u>492</u>	<u>897</u>	<u>451</u>	<u>369</u>	<u>746</u>	<u>632</u>	<u>837</u>
<u>827</u>	<u>795</u>	<u>654</u>	<u>684</u>	<u>537</u>	<u>658</u>	<u>145</u>	<u>279</u>

1. A class of fourth grade children tried this addition test in 1 minute. There are 40 examples.

<u>2</u>	<u>3</u>	<u>9</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>9</u>
<u>4</u>	<u>8</u>	<u>5</u>	<u>6</u>	<u>3</u>	<u>9</u>	<u>5</u>	<u>2</u>	<u>7</u>	<u>9</u>
<u>7</u>	<u>7</u>	<u>2</u>	<u>4</u>	<u>8</u>	<u>4</u>	<u>7</u>	<u>3</u>	<u>8</u>	<u>2</u>
<u>6</u>	<u>7</u>	<u>5</u>	<u>7</u>	<u>9</u>	<u>6</u>	<u>9</u>	<u>5</u>	<u>3</u>	<u>9</u>
<u>5</u>	<u>6</u>	<u>9</u>	<u>7</u>	<u>2</u>	<u>4</u>	<u>8</u>	<u>5</u>	<u>6</u>	<u>4</u>
<u>8</u>	<u>5</u>	<u>3</u>	<u>8</u>	<u>8</u>	<u>9</u>	<u>6</u>	<u>7</u>	<u>3</u>	<u>8</u>
<u>5</u>	<u>6</u>	<u>3</u>	<u>8</u>	<u>7</u>	<u>9</u>	<u>3</u>	<u>9</u>	<u>5</u>	<u>9</u>
<u>9</u>	<u>2</u>	<u>3</u>	<u>0</u>	<u>2</u>	<u>6</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>8</u>

The first time John tried he did 28 right in a minute, the next time he did 35 right in a minute, and the next time he did 33 in a minute. What is the average number John can do right in 1 minute?

This is the way to find John's average.

Add the number right on each trial. $28 + 35 + 33 = 96$. Divide the sum by the number of trials. $96 \div 3 = 32$. The average number of problems that John can do correctly in 1 minute is 32.

2. Try this test in 1 minute. Make three trials. What is the average number you can do right in 1 minute?

1. Here are the numbers of examples correct in each of three trials by some other fourth grade boys. What is the average number each boy can do right in 1 minute?

Arthur	Robert	Louis	Will	Mark	Ted
28	36	20	21	32	35
24	38	22	25	34	33
30	38	26	28	36	38

2. The weights of the boys on the fourth grade baseball nine are 55 lb., 62 lb., 65 lb., 58 lb., 69 lb., 60 lb., 53 lb., 71 lb., 65 lb. What is the average weight of the boys on the team?

Find the sum of all the weights.

Divide the sum by the number of boys.

3. The Busy Bee Girls' Sewing Club has five teams. Here are the number of articles made by each team for 5 weeks.

Team I	II	III	IV	V
17	12	24	15	16
9	16	10	22	25
24	20	17	16	23
12	19	20	24	19
18	21	14	13	22

What was the average weekly number of articles made by team 1? by team 2? by team 3? by team 4? by team 5?

1. The best runner in the fourth grade class of the Washington School can run a 40 yd. potato race in 37 sec. Many of the other boys are trying to beat his record. John tried three times. Here is his record.

1. 47 sec. What is the average time in which
2. 44 sec. John can run the race?
3. 45 sec.

2. Here are the records of some of the other boys on three trials. What is the average time in which each can run a 40 yd. potato race?

	Will	Arthur	Louis	Tom	Edward	Robert
1.	54 sec.	48	51	42	55	48
2.	49 sec.	47	52	41	55	46
3.	52 sec.	44	48	39	56	46

3. There are 45 children in a fourth grade room of the Jefferson School. Here are the numbers of children who attended each day for seven weeks. What was the average attendance for each week?

	I	II	III	IV	V	VI	VII
Mon.	42	45	43	45	39	37	38
Tues.	40	43	38	45	36	35	39
Wed.	45	39	38	40	40	39	42
Thurs.	34	40	44	43	41	41	41
Fri.	36	41	36	42	43	40	38

I. Write quotients.

	a	b	c	d	e	f
1.	6 $\overline{)4806}$	6 $\overline{)9672}$	6 $\overline{)3642}$	6 $\overline{)4806}$	6 $\overline{)8526}$	6 $\overline{)7284}$
2.	7 $\overline{)7161}$	7 $\overline{)9170}$	7 $\overline{)8547}$	7 $\overline{)6370}$	7 $\overline{)8617}$	7 $\overline{)9450}$
3.	8 $\overline{)1688}$	8 $\overline{)8408}$	8 $\overline{)4096}$	8 $\overline{)7208}$	8 $\overline{)5696}$	8 $\overline{)3248}$
4.	9 $\overline{)9288}$	9 $\overline{)7281}$	9 $\overline{)4860}$	9 $\overline{)5706}$	9 $\overline{)8910}$	9 $\overline{)6705}$
5.	6 $\overline{)6726}$	7 $\overline{)5971}$	8 $\overline{)6992}$	9 $\overline{)6309}$	7 $\overline{)3556}$	8 $\overline{)2408}$
6.	8 $\overline{)9992}$	7 $\overline{)4886}$	9 $\overline{)3556}$	6 $\overline{)5340}$	9 $\overline{)7992}$	7 $\overline{)4095}$

II. Write products.

$\begin{array}{r} 459 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 378 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 576 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 487 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 379 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 458 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 678 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 467 \\ 57 \\ \hline \end{array}$
$\begin{array}{r} 379 \\ 98 \\ \hline \end{array}$	$\begin{array}{r} 468 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 507 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 983 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 904 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 548 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 896 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 376 \\ 49 \\ \hline \end{array}$
$\begin{array}{r} 685 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 359 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 468 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 395 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 864 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 695 \\ 78 \\ \hline \end{array}$	$\begin{array}{r} 489 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 390 \\ 46 \\ \hline \end{array}$
$\begin{array}{r} 3579 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 4608 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 5973 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 6048 \\ 77 \\ \hline \end{array}$	$\begin{array}{r} 7438 \\ 98 \\ \hline \end{array}$	$\begin{array}{r} 9537 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 2473 \\ 49 \\ \hline \end{array}$	
$\begin{array}{r} 7539 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 4686 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 6048 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 7953 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 4878 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 9589 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 7254 \\ 69 \\ \hline \end{array}$	
$\begin{array}{r} 5439 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 5978 \\ 54 \\ \hline \end{array}$	$\begin{array}{r} 8466 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 9875 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 6376 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 3497 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 5639 \\ 48 \\ \hline \end{array}$	

TEST 1

This test contains all the multiplication facts. Try the test today, tomorrow, and the day after tomorrow. Take exactly 15 minutes each day. What is the average number of examples you can do correctly in that time?

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	
43	51	60	34	87	34	78	60	43	60	43	87	
<u>27</u>	<u>16</u>	<u>48</u>	<u>93</u>	<u>46</u>	<u>84</u>	<u>28</u>	<u>61</u>	<u>51</u>	<u>50</u>	<u>60</u>	<u>95</u>	
13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
92	51	29	15	78	29	15	92	15	60	92	78	60
<u>24</u>	<u>45</u>	<u>56</u>	<u>72</u>	<u>10</u>	<u>98</u>	<u>39</u>	<u>37</u>	<u>80</u>	<u>32</u>	<u>10</u>	<u>73</u>	<u>97</u>

TEST 2

In taking this test you will use all the multiplication facts. Try the test three times. Take exactly 15 minutes. What is the average number of examples you can do correctly in that time?

1.	2.	3.	4.	5.
43157	65342	73098	26145	80692
<u>73</u>	<u>10</u>	<u>29</u>	<u>92</u>	<u>37</u>
6.	7.	8.	9.	10.
15046	75301	46902	87392	78901
<u>45</u>	<u>68</u>	<u>86</u>	<u>54</u>	<u>10</u>

TEST IN MULTIPLICATION

For each example of Groups I and II write the product on a slip of paper placed under the example. Copy each example of Group III and perform the work.

GROUP I

Time 1 minute.

8	7	6	9	6	9	3	2	7	4	5	9
<u>4</u>	<u>7</u>	<u>9</u>	<u>7</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>9</u>	<u>6</u>	<u>7</u>	<u>2</u>	<u>9</u>
3	8	5	8	8	5	8	7	9	8	7	5
<u>4</u>	<u>9</u>	<u>8</u>	<u>2</u>	<u>7</u>	<u>4</u>	<u>6</u>	<u>9</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>5</u>

GROUP II

Time 2 minutes.

2365	3270	5403	4362
<u>7</u>	<u>6</u>	<u>9</u>	<u>8</u>
9647	8972	3087	4596
<u>5</u>	<u>4</u>	<u>3</u>	<u>6</u>

GROUP III

Time 6 minutes.

5876	4936	6759	8530	7493
<u>25</u>	<u>87</u>	<u>39</u>	<u>46</u>	<u>65</u>

ONE DOLLAR SALE

Ben often works in the general store near his home when Mr. Martin has special sales. One day Mr. Martin had a \$1 sale.

Here are the prices of some of the articles on sale.

Nuts, 4 pounds for \$1	Coffee, 3 pounds for \$1
Men's Ties, 3 for \$1	Boys' Gloves, 6 pairs for \$1
Toweling, 6 yd. for \$1	Flannelette, 5 yd. for \$1
Muslin, 4 yd. for \$1	Outing Flannel, 4 yd. for \$1
Children's Caps, 4 for \$1	Children's Rompers, 2 for \$1
Boys' Blouses, 2 for \$1	Men's Hose, 6 pairs for \$1
Lace, 10 yd. for \$1	Curtain Net, $7\frac{1}{2}$ yd. for \$1
Bath Towels, 2 for \$1	Dress Goods, $2\frac{1}{2}$ yd. for \$1
Bath Soap, 14 bars for \$1	

1. Tell without a pencil what must be paid at the sale by customers who bought

6 pounds of coffee	12 yd. muslin
12 pounds of nuts	1 doz. pairs men's hose
$\frac{1}{2}$ doz. children's rompers	$\frac{1}{2}$ doz. pairs boys' gloves
1 doz. bath towels	18 yd. toweling
30 yd. of lace	28 bars of soap
10 yd. flannelette	1 doz. children's caps
8 boys' blouses	
15 yd. curtain net ($7\frac{1}{2}$ yd. + $7\frac{1}{2}$ yd. are how many yd.?)	
5 yd. dress goods ($2\frac{1}{2}$ yd. + $2\frac{1}{2}$ yd. are how many yd.?)	

2. At the prices given on page 212

(1) What would be the cost of 1 lb. of nuts? of 2 lb.? of 3 lb.?

$\frac{1}{4}$ of 100 cents = ?

(2) What would 1 yd. of flannelette cost?

$\frac{1}{5}$ of 100 cents = ?

(3) What would 1 pair of children's rompers cost?

$\frac{1}{2}$ of 100 cents = ?

(4) What would 1 lb. of coffee cost?

$\frac{1}{3}$ of 100 cents = ____ and ____ r. Read $33\frac{1}{3}$ cents.

(5) What would 1 pr. boys' gloves cost?

$\frac{1}{6}$ of 100 cents = ____ and ____ r. Read $16\frac{2}{3}$ cents.

REMNANT SALE

Ben helped Mr. Martin when he had a remnant sale. He could tell the prices of many of these remnants without a pencil. See how many you can tell. Use your pencil only when you need to.

1. Muslin, 2 to 6 yd. lengths, 19¢ a yd.

Fine lawn, 2 to 6 yd. lengths, 32¢ a yd.

Tell the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length; and a 6 yd. length of each.

2. All wool dress goods 1 to 5 yd. lengths, \$2.98 a yd.

What is the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length?



3. Shirting 2 to 5 yd. lengths, 39¢ a yd.

Tell the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length.

4. Outing flannel 2 to 7 yd. lengths, 35¢ a yd.

Tell the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length; a 6 yd. length; a 7 yd. length.

5. Sateen 2 to 7 yd. length, 59¢ a yd.

Tell the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length; and a 6 yd. length.

6. Percale 2 to 10 yd. lengths, 39¢ a yd.

Tell the cost of a 4 yd. length; a 5 yd. length; a 6 yd. length; a 7 yd. length; a 9 yd. length.

7. Curtain drapery, 2 to 6 yd. lengths, 49¢ a yd.

Tell the cost of a 2 yd. length; a 3 yd. length; a 4 yd. length; a 5 yd. length; and a 6 yd. length.

8. Table linen $1\frac{1}{2}$ to $2\frac{1}{2}$ yd. lengths, 80¢ a yd.

Tell the cost of a $1\frac{1}{2}$ yd. length; a 2 yd. length; a $2\frac{1}{2}$ yd. length.

9. Heavy table linen $1\frac{1}{2}$ to $2\frac{1}{2}$ yd. lengths, \$1.24 a yd.

Tell the cost of a $1\frac{1}{2}$ yd. length; a 2 yd. length; a $2\frac{1}{2}$ yd. length.

1. Ben made a sales slip and gave it to each customer to give to the cashier. This is the way the one he gave to Mrs. Allen looked.

2. How much money must Mrs. Allen pay the cashier?

3. Have a classmate sell you three things at

the prices given in Mr. Martin's One Dollar Sale and give you a correct sales slip.

4. Sell three things to a classmate at the prices given in Mr. Martin's Remnant Sale. Make a correct sales slip and give it to your customer.

5. Make a correct sales slip for Mrs. Barnes, who bought 2 yards of flannel at 35¢ a yard and 5 yards of dress goods at \$2.98 a yard.

6. Make a correct sales slip for Mrs. Jackson, who bought $2\frac{1}{2}$ yd. of table linen at \$1.24 a yd., and 6 yd. of percale at 39¢ a yd.

7. Make a correct sales slip for three things bought by you at some store in your neighborhood.

8. Make a correct sales slip for two things bought by a classmate at a store.

H. B. MARTIN		
SOLD TO <u>Mrs. Allen</u>		
Sold by	Date	
Ben	Jan. 5	
2 yd. Satteen @ .59	1	18
3 yd. Shirting @ .39	1	17
	2	35

GREAT SALE
ALL GOODS TODAY
 AT
HALF PRICE

Everything in Mr. Martin's store will be sold at half price for one day. Here are the prices marked on articles. Tell what must be paid on the day of the Half Price Sale for each.

Boys' caps.....	\$1.00 and \$1.50		
Boys' sweaters.....	\$2.00 — \$2.50		
Boys' tennis shoes.....	\$1.50 — \$2.00 — \$2.40		
Girls' slippers.....	90¢ — \$1.20 — \$1.50		
Boys' watches.....	\$1.00		
Aprons.....	40¢ — 60¢ — 80¢		
Gloves.....	60¢ — 70¢ — 90¢		
Handkerchiefs per box.....	50¢ — 60¢ — 80¢		

Here are the prices paid for some things bought on the "Half Price" day. Tell what would have been paid for each on any other day.

1. Rose paid 69¢ for a dress.
2. Frank paid 75¢ for a cap.
3. Nell paid \$1.29 for a hat.
4. Jessie paid \$1.16 for a pair of shoes.
5. Sam paid 45¢ for a pair of gloves.
6. Kate paid 65¢ for a sewing box.
7. Ted paid 35¢ for a pocket knife.



16 ounces = one pound.
 oz. means ounce or ounces.
 lb. means pound or pounds.

1. Jay's mother sent him to the store to buy a pound of figs. He saw a sign that read, "14-oz. box figs, 44¢." He bought a box and took it home. How much less than a pound had he?

2. The grocer had 20-oz. jars of washed figs for \$.80. How much more than a lb. are 20 oz.?

3. I can buy a 4-oz. jar of salted nuts for \$.40. How many jars of this size must I buy if I need a lb.? What is the price of an oz.? What is the price of a lb.?

4. Here are some prices for mince meat:

"N" brand.....	2 lb. 2-oz. jars	\$1.35
"G & D" brand.....	2 lb. 8-oz. jars	1.30
"H" brand.....	16-oz. jar	.35
"L W" brand.....	9-oz. jar	.15

How many oz. will you get if you buy the "N" brand? How many if you buy the "G & D" brand? What will 3 lb. of the "H" brand cost? What will 2 jars of the "L W" brand cost? How much more than a pound in 2 jars of the "L W"? Which of the four brands costs the most?

5. I can buy a $\frac{1}{2}$ -lb. package of ginger for \$.80. How much is that for an oz.? How much for a lb.?

6. A 7-oz. jar of fine nuts costs \$.70. If I buy 2 jars, how much less than a lb. shall I have? What should I pay for 2 jars?

7. At Christmas time our grocer sold

1 $\frac{1}{4}$ lb. Plum pudding for \$2.00.

and 1 $\frac{1}{2}$ lb. Plum pudding for \$2.40.

How many oz. in 1 $\frac{1}{4}$ lb.? How many in 1 $\frac{1}{2}$ lb.? What was the price of an ounce of pudding?

8. I bought two 8 $\frac{1}{2}$ -oz. boxes of fancy Swiss cheese. How much more than a lb. did I have?

9. I bought an 8-oz. bottle of catsup for 10¢. How much must I pay for a lb.?

10. I bought a 12-oz. can of baking powder for 24¢. What is the cost of 1 oz.? of 16 oz.?

11. I can buy an 18-oz. bottle of cider vinegar for 23¢. Is 18 oz. 1 $\frac{1}{2}$ lb., or 1 $\frac{1}{4}$ lb., or 1 $\frac{1}{8}$ lb.?

12. 8 oz. are what part of a lb.?

4 oz. are what part of a lb.?

2 oz. are what part of a lb.?

Which holds more, a 1 $\frac{1}{2}$ -lb. bottle or a 1 $\frac{1}{8}$ -lb. bottle?

13. A 15-oz. jar of blackberry preserves costs 35¢. Would a lb. cost about 33¢ or about 38¢?

14. A 1-lb. 3-oz. jar of "F" brand preserves costs 54¢. I bought 2 jars. How many oz. did I get? What did 2 jars cost?

Here are some prices of articles sold by the lb.

1. R. & B. Plum Pudding.

4-lb. can	94¢	2-lb. can	49¢
3-lb. can	74¢	1-lb. can	28¢

How much would you pay for 4 1-lb. cans? How much would you save by buying a 4-lb. can instead?

How much would you pay for 2 2-lb. cans? Would you save by buying a 4-lb. can? How much?

Would it be cheaper to buy 1 2-lb. can and 1 1-lb. can or to buy a 3-lb. can?

2. Tea.

No. 1 brand 1-lb.	\$0.69
5-lb.	3.25
No. 2 brand 1-lb.	.44
5-lb.	2.00
No. 3 brand 1-lb.	.84
8-oz. can	.44
4-oz. can	.24

(1) How much do you pay a lb. for No. 1 brand if you buy a 5-lb. can? What would you pay for 5 1-lb. cans of No. 1 brand?

(2) How much do you save by buying a 5-lb. can of No. 2 brand instead of 5 1-lb. cans?

(3) How many 8-oz. cans does it take to make a lb.? How many 4-oz. cans? What is the cost of 2 8-oz. cans? Of 4 4-oz. cans?

3. Butter.

No. 1	1 lb. 52¢	5 lb. \$2.55
No. 2	1 lb. 50¢	5 lb. \$2.45
No. 3	1 lb. 48¢	5 lb. \$2.35

What do I save a lb. by buying a 5-lb. package instead of 5 1-lb. packages of No. 1? of No. 2? of No. 3?

4. Baking Powder.

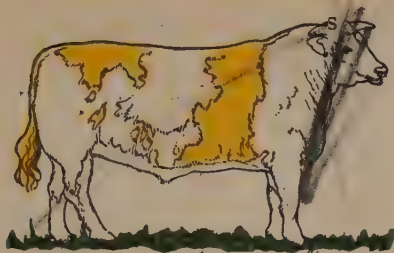
12-oz. can, 25¢; 6-oz. can, 15¢; 4-oz. can, 10¢.

- (1) How many 4-oz. cans will make 1 lb.?
- (2) How many 4-oz. cans will make 12 oz.?
- (3) What would three 4-oz. cans cost?
- (4) How much do you save by buying one 12-oz. can instead of three 4-oz. cans?
- (5) What would two 6-oz. cans cost?
- (6) How much would you save by buying one 12-oz. can instead of two 6-oz. cans?

5. Cocoa and Chocolate.

"B" brand chocolate, $\frac{1}{2}$ -lb. can 18¢ 1-lb. can 32¢
 $\frac{1}{5}$ -lb. can cocoa 10¢ $\frac{1}{2}$ -lb. can 23¢

- (1) What is the cost of two $\frac{1}{2}$ -lb. cans of "B" brand chocolate?
- (2) How much do you save by buying a 1-lb. can?
- (3) How many oz. in five $\frac{1}{5}$ -lb. cans of cocoa?
- (4) What would you pay for two $\frac{1}{2}$ -lb. cans of cocoa? How many oz. in two $\frac{1}{2}$ -lb. cans?



2000 pounds = 1 ton (T.)

1. This steer weighs 1575 pounds. How much less than a ton does the steer weigh?

2. A barrel of flour is almost 200 pounds. How many barrels of flour would it take to weigh almost a ton?

3. Here are the weights in pounds of eleven boys who are on a football team:

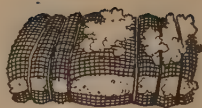
John	110	Will	114	Jay	119
Tom	117	Sam	124	Ed	116
Frank	120	Fred	109	Bob	123
Phil	106	Joe	115		

What is the weight of all of them together?

4. The boys rode in a two-horse wagon to the football grounds. The wagon weighed 1050 lb. How heavy was the load? How much more than a ton did the horses have to draw?

5. Some elevators in city stores are allowed to carry only 1800 lb. How many tons is this?

6. This bale of cotton weighs 500 pounds. How many bales of this size will it take to make a ton?



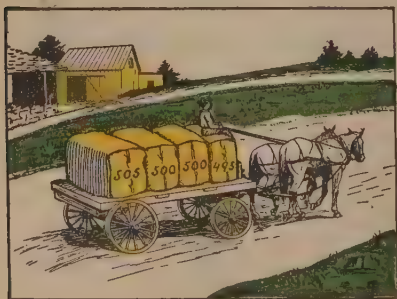
7. One month Frank's father sold 8 young calves. Their weights were 175 lb., 180 lb., 203 lb., 165 lb., 198 lb., 179 lb., 130 lb., and 195 lb. How many lb. did the 8 calves weigh?

8. The calves were sold for 8 cents a lb. How much did Frank's father get for all of them?

9. Have you ever seen a two-horse load of coal? Two horses can draw 2 or 3 tons of coal. How many lb. in 2 T. of coal? in 3 tons?

10. What must I pay for 6 tons of lump coal at \$5.45 a ton? at \$5.70 a ton?

11. What must I pay for 4 tons of smokeless coal at \$11.60 a ton? at \$13.10 a ton?

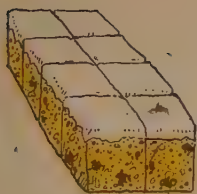


12. How many lb. of cotton on the wagon in the picture? Is there more or less than a ton?

13. How many 200 lb. men would it take to make 1 T.? 4 T.?

14. Does an automobile that weighs 1987 lb. weigh more or less than a ton? How much?

Fourths and Eighths



1. Divide this cake among 4 boys. Show the share of each.

2. Divide it among 8 boys. Show the share of each.

3. Draw the share of a boy who received $\frac{5}{8}$ of this cake.

4. Draw $\frac{3}{8}$ of it; $\frac{7}{8}$ of it; $\frac{1}{2}$ of it; $\frac{1}{4}$ of it; $\frac{3}{4}$ of it.

5. Draw the share of a boy who received $1\frac{1}{2}$ cakes; of one who received $1\frac{7}{8}$ cakes; of one who received $2\frac{1}{2}$ cakes; of one who received $2\frac{3}{4}$ cakes.

Which of these boys received the largest share?

Fifths and Tenths

1. Paul has a bank that holds one dollar in dimes. Paul is saving a dollar.



When Paul has put in one dime, he has saved $\frac{1}{10}$ of his dollar. How many dimes has he put in when he has saved $\frac{1}{5}$ of his dollar? $\frac{2}{5}$? $\frac{3}{5}$? $\frac{4}{5}$? $\frac{5}{5}$?

2. How many dimes has he put in when he has saved $\frac{3}{10}$ of his dollar? $\frac{5}{10}$? $\frac{7}{10}$? $\frac{9}{10}$? $\frac{10}{10}$?

Sixths and Thirds

1. It is just one hour's ride on the train from Tom's home to his uncle's. Tom started at 12 o'clock.

2. When the train passed the edge of the woods, it was this time.

Tom said, "We are $\frac{1}{6}$ of the way there."

$$\frac{1}{6} \text{ of } 60 \text{ min.} = 10 \text{ min.}$$

3. When the train passed the old mill, it was this time. Tom said, "We are $\frac{2}{6}$ of the way there."

$$\frac{2}{6} \text{ of } 60 \text{ min.} = 20 \text{ min.}$$

How many minutes in $\frac{1}{3}$ of 60 minutes?

4. When the train passed the big pond, it was this time. Tom said, "We are $\frac{3}{6}$ of the way there."

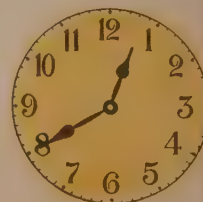
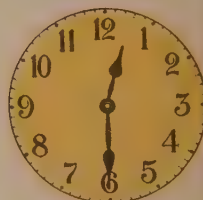
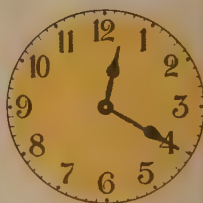
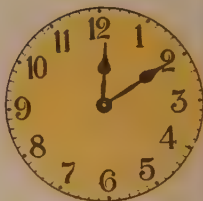
$$\frac{3}{6} \text{ of } 60 \text{ min.} = 30 \text{ min.}$$

$$\frac{1}{2} \text{ of } 60 \text{ min.} = \dots \text{ min.}$$

5. When the train passed the bridge, it was this time. Tom said, "We are $\frac{4}{6}$ of the way there."

$$\frac{4}{6} \text{ of } 60 \text{ min.} = 40 \text{ min.}$$

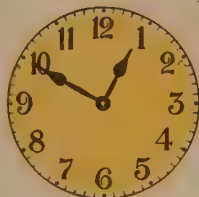
$$\frac{2}{3} \text{ of } 60 \text{ min.} = \dots \text{ min.}$$



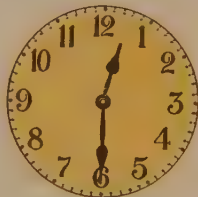
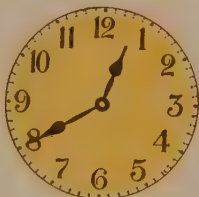
6. When the train passed the schoolhouse, it was this time. Tom said, "We are $\frac{5}{6}$ of the way there."

$\frac{5}{6}$ of 60 min. = 50 min.

7. Where was the minute hand of the clock when the train had gone $\frac{6}{8}$ of the way?



8. Which of these clocks shows the time when Tom had gone $\frac{1}{2}$ of the way?

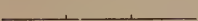


9. Which shows the time when he had gone $\frac{1}{3}$ of the way? $\frac{2}{3}$ of the way?

10. Some boys all started to do a piece of work at the same time. Here are the amounts of time each took to finish.

John	Tom	Will	Frank	Sam	Fred	Paul	Ted
$\frac{1}{2}$ hr.	$\frac{1}{4}$ hr.	$\frac{1}{3}$ hr.	$\frac{5}{6}$ hr.	$\frac{2}{3}$ hr.	$\frac{2}{6}$ hr.	$\frac{3}{4}$ hr.	$\frac{4}{6}$ hr.

Mark the boy who took the shortest time 1, the one who took the next shortest time 2, and so on. If two boys finished at the same time, give them the same number.

- A  Line *A* is divided into halves.
- B  Line *B* is divided into fourths.
- C  Line *C* is divided into eighths.
- D  Which of these lines is divided
- E  into fifths? into sixths? into
- F  thirds?

Draw a line $\frac{1}{2}$ as long as line *A*.

Draw a line $\frac{1}{4}$ as long as line *B*.

Draw one $\frac{3}{4}$ as long as line *B*.

Draw a line $\frac{3}{8}$ as long as line *C*.

Draw a line $\frac{5}{8}$ as long as line *C*.

Draw one $\frac{7}{8}$ as long as line *C*.

Draw a line $\frac{1}{3}$ as long as *D*; $\frac{2}{3}$ as long as *D*.

Draw a line $\frac{1}{5}$ as long as *F*; $\frac{2}{5}$ as long as *F*.

Draw a line $\frac{3}{5}$ as long as *F*; $\frac{4}{5}$ as long as *F*.

Draw a line $\frac{5}{6}$ as long as *E*.

$\frac{1}{2}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{4}{5}$, $\frac{7}{8}$, $\frac{3}{4}$ are called fractions.

Draw a line 1 ft. long on the blackboard

Show these fractions on it: $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{2}{3}$, $\frac{5}{6}$.

How many inches in $\frac{1}{2}$ foot? in $\frac{1}{3}$ ft.? in $\frac{1}{6}$ ft.?
in $\frac{2}{3}$ ft.? in $\frac{5}{6}$ ft.?

How many inches in $\frac{1}{4}$ of a ft.? How many
in $\frac{3}{4}$ of a ft.? How many in both?

Show by a drawing.



The Washington School is to have a parents' day. The children in each room are going to wear badges or bows of different colored ribbons. John, Ned, and Jane have charge of the ribbon sale.

1. Many of the larger boys want $\frac{1}{6}$ of a yd. How many inches in a yard?

Show by a drawing $\frac{1}{6}$ of a yd. How many inches in it?

2. Some of the boys want $\frac{1}{4}$ yd. Show by a drawing $\frac{1}{4}$ of a yd. How many inches in $\frac{1}{4}$ of a yd.?

3. Some of the girls want $\frac{1}{2}$ of a yd. or $\frac{1}{3}$ of a yd. Show by a drawing $\frac{1}{2}$ of a yd. Show $\frac{1}{3}$ of a yd. How many inches in $\frac{1}{2}$ of a yd.? in $\frac{1}{3}$ of a yd.?

4. Jane wants $\frac{3}{4}$ of a yd. How many inches should she get? Show by a drawing.

5. Nell wants $\frac{5}{6}$ of a yd. How many inches should she get? Show by a drawing.

6. Bess bought $\frac{1}{3}$ of a yd. How many inches did she get? She then bought $\frac{2}{3}$ of a yd. more. How many inches had she in all? How much is $\frac{2}{3}$ of a yd. and $\frac{1}{3}$ of a yd.? Show by a drawing.

7. The ribbon was sold at these prices:

No. 1 — 20¢ a yd.

No. 2 — 24¢ a yd.

No. 3 — 30¢ a yd.

8. What must children pay who bought these amounts?

$\frac{1}{2}$ yd. of No. 1	$\frac{1}{4}$ yd. of No. 1
$1\frac{1}{2}$ yd. of No. 1	$\frac{3}{4}$ yd. of No. 1
$2\frac{1}{2}$ yd. of No. 1	$1\frac{1}{4}$ yd. of No. 1
$\frac{1}{3}$ yd. of No. 2	$\frac{3}{4}$ yd. of No. 2
$\frac{1}{4}$ yd. of No. 2	$\frac{2}{3}$ yd. of No. 2
$\frac{1}{6}$ yd. of No. 2	$\frac{5}{6}$ yd. of No. 2
$\frac{1}{2}$ yd. of No. 3	$\frac{2}{3}$ yd. of No. 3
$\frac{1}{3}$ yd. of No. 3	$\frac{1}{6}$ yd. of No. 3
$\frac{5}{6}$ yd. of No. 3	

9. State the missing numbers.

$\frac{1}{2}$ of 10 =	$\frac{1}{5}$ of 10 =	$\frac{2}{5}$ of 10 =
$\frac{1}{2}$ of 20 =	$\frac{1}{5}$ of 20 =	$\frac{3}{5}$ of 10 =
$\frac{1}{2}$ of 30 =	$\frac{1}{5}$ of 30 =	$\frac{4}{5}$ of 10 =
$\frac{1}{3}$ of 12 =	$\frac{1}{4}$ of 12 =	$\frac{1}{6}$ of 12 =
$\frac{2}{3}$ of 12 =	$\frac{3}{4}$ of 12 =	$\frac{5}{6}$ of 12 =
$\frac{1}{4}$ of 40 =	$\frac{3}{4}$ of 40 =	$\frac{1}{6}$ of 24 =
$\frac{1}{5}$ of 40 =	$\frac{3}{8}$ of 40 =	$\frac{1}{2}$ of 24 =
$\frac{1}{8}$ of 40 =	$\frac{5}{8}$ of 40 =	$\frac{1}{3}$ of 24 =
$\frac{1}{6}$ of 60 =	$\frac{5}{8}$ of 80 =	$\frac{2}{3}$ of 24 =
$\frac{5}{6}$ of 60 =	$\frac{3}{8}$ of 80 =	$\frac{3}{4}$ of 24 =



Bess and Nell made candy for the church sale. They planned to sell the candy at these prices a pound.

Taffy, 20¢	Nut Fudge, 60¢	Chocolate, 80¢
Peanut, 40¢	Caramels, 60¢	Candy Fruits, 80¢

They put the candy in $\frac{1}{2}$ lb. and $\frac{1}{4}$ lb. boxes.

1. What is the cost of $\frac{1}{2}$ lb. box of taffy? a $\frac{1}{4}$ lb. box?
2. What is the cost of a $\frac{1}{4}$ lb. box of peanut candy? of a $\frac{1}{2}$ lb. box? How many $\frac{1}{4}$ lb. in $\frac{1}{2}$ lb.?
3. Sam bought a $\frac{1}{4}$ lb. box of caramels and a $\frac{1}{2}$ lb. box of fudge. How much candy had he in all? What did Sam pay for the fudge? What did he pay for the caramels?
4. Mr. James has 4 children. He bought a $\frac{1}{4}$ lb. box of chocolates for each. How much candy did he buy?
5. Mr. Wells has six children. He bought a $\frac{1}{2}$ lb. box of taffy for each. How many pounds of taffy did he buy? What did it cost?
6. Nell's father bought $2\frac{1}{2}$ lb. of chocolates. What did he pay for them? The chocolates were in $\frac{1}{2}$ lb. boxes. How many boxes did he get?

7. Sue's mother bought three $\frac{1}{4}$ lb. boxes of caramels. What did she pay for each? What did the 3 boxes cost?

8. Billy wanted 5¢ worth of taffy? How many 5¢ in 20¢? What sized box did Billy get?

What sized box would he get for 10¢?

9. Bess' little brother wanted 10¢ worth of peanut candy. What does peanut candy cost? How many 10¢ in 40¢. What sized box did he get? What sized box would he get for 20¢?

10. Dick and Fred each wanted 5¢ worth of peanut candy. How many 5¢ in 40¢? There were no $\frac{1}{8}$ lb. boxes on sale. Dick received one half of a $\frac{1}{4}$ lb. box and Fred the other half of the $\frac{1}{4}$ lb. box. Each had $\frac{1}{8}$ of a lb.

11. Tom wanted 10¢ worth of chocolates. What part of a lb. did he get?

12. Tom came back for 20¢ worth more of chocolates. What sized box did he get?

13. How many $\frac{1}{8}$ lb. in a $\frac{1}{4}$ lb. box?

14. Tom bought $\frac{2}{8}$ lb. and $\frac{1}{8}$ lb. What part of a lb. has he?

15. What must you pay for $\frac{1}{4}$ lb. caramels? for $\frac{1}{2}$ lb.? for $\frac{3}{4}$ lb.?

16. What must you pay for $\frac{1}{8}$ lb. candy fruits? for $\frac{1}{4}$ lb.? for $\frac{3}{8}$ lb.? for $\frac{1}{2}$ lb.? for $\frac{5}{8}$ lb.? for $\frac{3}{4}$ lb.?

1. Tell the missing numbers.

- $\frac{1}{2}$ of 20¢ = __¢. $\frac{1}{2}$ lb. box of 20¢ candy costs __¢.
 $\frac{1}{4}$ of 20¢ = __¢. $\frac{1}{4}$ lb. box of 20¢ candy costs __¢.
 $\frac{3}{4}$ of 20¢ = __¢. Three $\frac{1}{4}$ lb. boxes of 20¢ candy
 cost __¢.
- $\frac{1}{2}$ of 40¢ = __¢. $\frac{1}{2}$ lb. of 40¢ candy costs __¢.
 $\frac{1}{4}$ of 40¢ = __¢. $\frac{1}{4}$ lb. of 40¢ candy costs __¢.
 $\frac{1}{8}$ of 40¢ = __¢. $\frac{1}{8}$ lb. of 40¢ candy costs __¢.
 $\frac{3}{4}$ of 40¢ = __¢. Three $\frac{1}{4}$ lb. of 40¢ candy cost __¢.
 $\frac{3}{8}$ of 40¢ = __¢. Three $\frac{1}{8}$ lb. of 40¢ candy cost __¢.
 $\frac{1}{2}$ of 60¢ = __¢. $\frac{1}{2}$ lb. of 60¢ candy costs __¢.
 $\frac{1}{4}$ of 60¢ = __¢. $\frac{1}{4}$ lb. of 60¢ candy costs __¢.
 $\frac{3}{4}$ of 60¢ = __¢. Three $\frac{1}{4}$ lb. of 60¢ candy cost __¢.
 $\frac{1}{2}$ of 80¢ = __¢. $\frac{1}{2}$ lb. of 80¢ candy costs __¢.
 $\frac{1}{4}$ of 80¢ = __¢. $\frac{1}{4}$ lb. of 80¢ candy costs __¢.
 $\frac{3}{4}$ of 80¢ = __¢. Three $\frac{1}{4}$ lb. of 80¢ candy cost __¢.
 $\frac{1}{8}$ of 80¢ = __¢. $\frac{1}{8}$ lb. of 80¢ candy costs __¢.
 $\frac{3}{8}$ of 80¢ = __¢. Three $\frac{1}{8}$ lb. of 80¢ candy cost __¢.
 $\frac{5}{8}$ of 80¢ = __¢. Five $\frac{1}{8}$ lb. of 80¢ candy cost __¢.

2. Tell the missing numbers.

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| $\frac{1}{2}$ of 10 = __ | $\frac{1}{3}$ of 12 = __ | $\frac{1}{4}$ of 16 = __ | $\frac{1}{8}$ of 24 = __ |
| $\frac{1}{2}$ of 12 = __ | $\frac{2}{3}$ of 12 = __ | $\frac{3}{4}$ of 16 = __ | $\frac{3}{8}$ of 24 = __ |
| $\frac{1}{2}$ of 16 = __ | $\frac{2}{3}$ of 15 = __ | $\frac{3}{4}$ of 32 = __ | $\frac{5}{8}$ of 24 = __ |
| $\frac{1}{2}$ of 18 = __ | $\frac{2}{3}$ of 21 = __ | $\frac{3}{4}$ of 36 = __ | $\frac{1}{6}$ of 24 = __ |
| $\frac{1}{2}$ of 20 = __ | $\frac{2}{3}$ of 27 = __ | $\frac{3}{4}$ of 40 = __ | $\frac{5}{6}$ of 24 = __ |



Mrs. Fisher has a lunch room for the Jefferson School children. Mary Allen helps her at noon time in the lunch room every Monday. Kate Brown helps her on the other four school days of the week.

1. How many days does Mary work when there are 200 school days in the school year? How many days does Kate work?

Mary works $\frac{1}{5}$ of the time.

Kate works $\frac{4}{5}$ of the time.

$$\begin{array}{r} 40 \\ 5 \overline{)200} \end{array}$$

$\frac{1}{5}$ of 200 days is 40 days.

$$40 \times 4 = 160$$

$\frac{4}{5}$ of 200 days is 160 days.

2. How many days does Mary work when there are 190 school days in the year? How many days does Kate work when there are 190 school days in the school year?

3. One year Fred Adams helped Mrs. Fisher two school days of the week, and John Adams helped her the other three school days of the week. If there were 200 school days that year, how many days did Fred work? How many days did John work?

4. How many days did Fred and John each work if there were only 195 school days that year?

1. Will and Arthur together bought a lunch for a picnic. It cost 90¢. Arthur's little sister is going with them. So Arthur paid for $\frac{2}{3}$ of the lunch, and Rob, for the other $\frac{1}{3}$. How many cents should each pay?

2. Rob and Ted bought a bicycle for \$28.00. Rob is to use it 3 days of every week, and Ted is to use it on the other 4 days of the week. What part of the cost of the bicycle should Rob pay? What part should Ted pay? How many dollars should each pay?

3. Louis helps Mr. White deliver groceries. He works 6 days a week and receives \$3.00. How much should he receive for a week in which he works only 5 days? How much for a week in which he works 4 days?

4. Edward wishes to buy a tool chest that costs \$4.50. His father will give him $\frac{1}{3}$ of the cost if Edward earns the other $\frac{2}{3}$ in a month. How much must Edward earn? How much money will he get from his father?

5. Write the answers.

$$\frac{3}{5} \text{ of } 200 = \underline{\hspace{2cm}}$$

$$\frac{2}{5} \text{ of } 190 = \underline{\hspace{2cm}}$$

$$\frac{4}{5} \text{ of } 195 = \underline{\hspace{2cm}}$$

$$\frac{2}{3} \text{ of } \$4.50 = \underline{\hspace{2cm}}$$

$$\frac{2}{3} \text{ of } 90¢ = \underline{\hspace{2cm}}$$

$$\frac{1}{7} \text{ of } \$28.00 = \underline{\hspace{2cm}}$$

$$\frac{1}{8} \text{ of } 160 = \underline{\hspace{2cm}}$$

$$\frac{5}{8} \text{ of } 160 = \underline{\hspace{2cm}}$$

$$\frac{3}{8} \text{ of } 240 = \underline{\hspace{2cm}}$$

$$\frac{2}{3} \text{ of } 345 = \underline{\hspace{2cm}}$$

$$\frac{3}{4} \text{ of } 248 = \underline{\hspace{2cm}}$$

$$\frac{1}{8} \text{ of } 240 = \underline{\hspace{2cm}}$$

CHAPTER V

DIVISION

Name the quotient and the remainder. Read across the page.

1. $26 \div 3$	29 $\div$ 7	42 $\div$ 9	34 $\div$ 6	37 $\div$ 5
2. $37 \div 9$	43 $\div$ 7	38 $\div$ 6	35 $\div$ 5	59 $\div$ 8
3. $39 \div 6$	46 $\div$ 9	66 $\div$ 7	44 $\div$ 6	82 $\div$ 9
4. $49 \div 7$	35 $\div$ 9	74 $\div$ 8	33 $\div$ 7	82 $\div$ 8
5. $34 \div 5$	62 $\div$ 9	38 $\div$ 8	63 $\div$ 9	80 $\div$ 9
6. $46 \div 7$	71 $\div$ 9	56 $\div$ 9	70 $\div$ 8	54 $\div$ 6
7. $6 \overline{)600}$	$6 \overline{)540}$	$7 \overline{)420}$	$8 \overline{)560}$	$3 \overline{)180}$
8. $3 \overline{)900}$	$3 \overline{)600}$	$6 \overline{)606}$	$6 \overline{)660}$	$6 \overline{)186}$
9. $2 \overline{)140}$	$7 \overline{)140}$	$5 \overline{)200}$	$4 \overline{)120}$	$9 \overline{)189}$
10. $2 \overline{)160}$	$4 \overline{)160}$	$8 \overline{)160}$	$6 \overline{)420}$	$5 \overline{)750}$

Write answers only.

1. $125 \div 5$	2. $350 \div 5$	3. $504 \div 8$
4. $225 \div 5$	5. $350 \div 7$	6. $640 \div 8$
7. $120 \div 6$	8. $420 \div 7$	9. $720 \div 8$
10. $240 \div 6$	11. $455 \div 7$	12. $450 \div 9$
13. $300 \div 6$	14. $560 \div 8$	15. $495 \div 9$
16. $366 \div 6$	17. $352 \div 8$	18. $819 \div 9$
19. $848 \div 4$	20. $729 \div 9$	21. $549 \div 9$
22. $855 \div 5$	23. $175 \div 5$	24. $175 \div 7$

SHORT DIVISION

I	3	$\overline{639}$	2	$\overline{468}$	4	$\overline{848}$	2	$\overline{864}$	3	$\overline{960}$	4	$\overline{408}$
	2	$\overline{208}$	4	$\overline{840}$	3	$\overline{360}$	4	$\overline{884}$	2	$\overline{646}$	3	$\overline{396}$
II	3	$\overline{129}$	4	$\overline{128}$	2	$\overline{168}$	3	$\overline{246}$	4	$\overline{168}$	2	$\overline{146}$
	5	$\overline{150}$	6	$\overline{240}$	3	$\overline{210}$	4	$\overline{328}$	2	$\overline{188}$	7	$\overline{287}$
III	2	$\overline{463}$	4	$\overline{847}$	3	$\overline{905}$	2	$\overline{607}$	3	$\overline{694}$	4	$\overline{405}$
	4	$\overline{489}$	5	$\overline{558}$	3	$\overline{367}$	2	$\overline{865}$	4	$\overline{885}$	2	$\overline{263}$
IV	3	$\overline{456}$	3	$\overline{789}$	2	$\overline{564}$	2	$\overline{740}$	4	$\overline{568}$	4	$\overline{724}$
	5	$\overline{650}$	5	$\overline{605}$	3	$\overline{849}$	4	$\overline{928}$	5	$\overline{750}$	2	$\overline{984}$
V	2	$\overline{358}$	2	$\overline{730}$	4	$\overline{532}$	4	$\overline{952}$	3	$\overline{744}$	3	$\overline{501}$
	4	$\overline{756}$	5	$\overline{720}$	3	$\overline{807}$	2	$\overline{998}$	6	$\overline{912}$	5	$\overline{675}$
VI	4	$\overline{569}$	4	$\overline{765}$	3	$\overline{458}$	3	$\overline{575}$	2	$\overline{789}$	2	$\overline{367}$
	5	$\overline{658}$	3	$\overline{844}$	2	$\overline{923}$	6	$\overline{789}$	4	$\overline{967}$	5	$\overline{750}$
VII	3	$\overline{467}$	2	$\overline{731}$	4	$\overline{550}$	2	$\overline{593}$	3	$\overline{535}$	4	$\overline{709}$
	5	$\overline{678}$	3	$\overline{800}$	2	$\overline{333}$	4	$\overline{913}$	6	$\overline{760}$	2	$\overline{953}$
VIII	2	$\overline{804}$	2	$\overline{613}$	3	$\overline{916}$	4	$\overline{408}$	3	$\overline{616}$	4	$\overline{809}$
	5	$\overline{501}$	5	$\overline{517}$	4	$\overline{803}$	3	$\overline{302}$	6	$\overline{630}$	2	$\overline{811}$
IX	3	$\overline{122}$	3	$\overline{271}$	4	$\overline{213}$	4	$\overline{163}$	2	$\overline{161}$	3	$\overline{180}$
	5	$\overline{254}$	2	$\overline{175}$	4	$\overline{301}$	5	$\overline{203}$	2	$\overline{171}$	5	$\overline{154}$

PRACTICE IN SHORT DIVISION

Name the quotient and remainder. Read across the page.

11 $\overline{)22}$	11 $\overline{)44}$	11 $\overline{)33}$	11 $\overline{)77}$	11 $\overline{)99}$	11 $\overline{)55}$
12 $\overline{)24}$	12 $\overline{)48}$	12 $\overline{)72}$	12 $\overline{)36}$	12 $\overline{)65}$	12 $\overline{)84}$
13 $\overline{)26}$	13 $\overline{)65}$	13 $\overline{)30}$	13 $\overline{)62}$	13 $\overline{)78}$	13 $\overline{)91}$
14 $\overline{)28}$	14 $\overline{)42}$	14 $\overline{)58}$	14 $\overline{)84}$	14 $\overline{)70}$	14 $\overline{)98}$

15 $\overline{)30}$	15 $\overline{)45}$	15 $\overline{)75}$	15 $\overline{)90}$	15 $\overline{)60}$	15 $\overline{)85}$
16 $\overline{)32}$	16 $\overline{)48}$	16 $\overline{)90}$	16 $\overline{)96}$	16 $\overline{)64}$	16 $\overline{)80}$
17 $\overline{)34}$	17 $\overline{)56}$	17 $\overline{)85}$	17 $\overline{)68}$	17 $\overline{)75}$	17 $\overline{)85}$
18 $\overline{)36}$	18 $\overline{)54}$	18 $\overline{)99}$	18 $\overline{)64}$	18 $\overline{)76}$	18 $\overline{)90}$

19 $\overline{)38}$	19 $\overline{)57}$	19 $\overline{)95}$	19 $\overline{)57}$	19 $\overline{)76}$	19 $\overline{)84}$
20 $\overline{)40}$	20 $\overline{)60}$	20 $\overline{)75}$	20 $\overline{)37}$	20 $\overline{)99}$	20 $\overline{)90}$
21 $\overline{)42}$	21 $\overline{)63}$	21 $\overline{)75}$	21 $\overline{)88}$	21 $\overline{)95}$	21 $\overline{)84}$
25 $\overline{)75}$	25 $\overline{)50}$	25 $\overline{)90}$	25 $\overline{)54}$	25 $\overline{)85}$	25 $\overline{)96}$

11 $\overline{)88}$	30 $\overline{)128}$	13 $\overline{)91}$	14 $\overline{)75}$	15 $\overline{)90}$	35 $\overline{)112}$
17 $\overline{)85}$	18 $\overline{)95}$	19 $\overline{)95}$	20 $\overline{)88}$	21 $\overline{)63}$	25 $\overline{)78}$
14 $\overline{)75}$	25 $\overline{)120}$	31 $\overline{)124}$	13 $\overline{)80}$	15 $\overline{)90}$	16 $\overline{)84}$
25 $\overline{)75}$	12 $\overline{)96}$	17 $\overline{)91}$	18 $\overline{)90}$	35 $\overline{)121}$	19 $\overline{)95}$

1. Mary gathered 168 eggs. She sold them by the dozen. How many dozens did she have?

How do you find how many dozens Mary had?

Some children might divide by short division. Others who do not know the 12's must do it in another way, which is called long division. People use this method when the divisor is larger than 12.

$\begin{array}{r} 14 \\ 12 \overline{)168} \\ \underline{12} \\ 48 \\ \underline{48} \\ 0 \end{array}$	Think how many 12's in 16. Write 1 in the quotient. Multiply 12 by 1. Subtract 12 from 16. Write 8 of the dividend after 4.
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$\begin{array}{r} 48 \\ \underline{48} \\ 0 \end{array}$	Think how many 12's in 48. Try 4. Multiply 12 by 4 and subtract. There is no remainder.
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Multiply

12 Prove your work by multiplying 12, the
14 divisor, by 14, the quotient. The product must equal what?

2. How many 12's in 384? in 504? in 624?

3. Divide 768 by 12. $864 \div 12 = ?$ $372 \div 12 = ?$

4. (a) $12 \overline{)984}$ (b) $12 \overline{)780}$ (c) $12 \overline{)288}$ (d) $12 \overline{)528}$

5. There are 63360 inches in a mile. How many feet is that?

6. A farmer raised 792 bushels of corn on 12 acres. How much was that for one acre?

7. A merchant paid \$204 for a dozen suits of young men's clothing. What did one suit cost?

1. A train went 735 miles in 21 hr. What was the average number of miles traveled in 1 hr.?

Think how many 21's in 73. Try 3.

$$\begin{array}{r} 35 \\ 21 \overline{)735} \end{array}$$
 $3 \times 21 = ?$ Subtract. Think how many 21's in 105. Try 5. Why not 4? When the remainder is about $\frac{1}{2}$ of the divisor, it is safe to try 5 or 4. Prove your work by multiplying 21 by 35.

2. Find quotients.

$21 \overline{)231}$	$21 \overline{)357}$	$21 \overline{)462}$	$21 \overline{)714}$	$21 \overline{)861}$
$21 \overline{)294}$	$21 \overline{)420}$	$21 \overline{)483}$	$21 \overline{)756}$	$21 \overline{)945}$

3. Find quotients.

$31 \overline{)372}$	$31 \overline{)651}$	$31 \overline{)837}$	$31 \overline{)992}$	$51 \overline{)561}$
$31 \overline{)558}$	$31 \overline{)806}$	$31 \overline{)961}$	$41 \overline{)656}$	$51 \overline{)816}$

4. How many 24's in 144? in 576? in 864?

5. Divide 72 by 24. $120 \div 24 = ?$ $360 \div 24 = ?$

6. $24 \overline{)3648}$ $21 \overline{)378}$ $31 \overline{)1736}$ $51 \overline{)1275}$ $52 \overline{)1820}$

7. How many 16-inch pieces can Harry cut out of a board 14 ft. 10 in. long? 14 ft. 10 in. = 178 in.

$$\begin{array}{r} 11 \\ 16 \overline{)178} \end{array}$$
 Think how many 16's in 17.

Think how many 16's in 18.

$$\begin{array}{r} 16 \\ 18 \end{array}$$
 He can cut 11 pieces each 16 inches long and have 2 inches remaining.

16

2 remainder.

1.

$$25 \overline{)325}$$

$$25 \overline{)375}$$

$$25 \overline{)475}$$

$$25 \overline{)500}$$

$$25 \overline{)675}$$

$$25 \overline{)750}$$

$$25 \overline{)775}$$

$$25 \overline{)875}$$

$$25 \overline{)850}$$

$$25 \overline{)925}$$

$$25 \overline{)4800}$$

$$26 \overline{)520}$$

$$26 \overline{)2652}$$

$$26 \overline{)7800}$$

$$26 \overline{)7826}$$

2. Roy's mother had 22 hens, which laid 89 eggs in a week. How many eggs on an average was that for each hen? How many dozens in 89?

3. A dealer bought 16 automobiles for \$9184. What was the average cost?

574

Think how many 16's in 91. Try 5.

$$16 \overline{)9184}$$

80

118

112

64

Multiply 16 by 5 and subtract. When the remainder is more than half as large as the divisor, the next quotient figure will be 5 or more. Do we need to try 5?

Why? Then try 7. Why not 6? Multiply 16 by 7. Subtract as before and compare the remainder, 6, with the divisor.

Try 4. Why not 5? Multiply and subtract.

Multiply

574

16

Prove your answer by multiplication. What should the product be?

The average cost of the automobiles was \$574.

4. Divide 378 by 18. $558 \div 18 = ?$ $324 \div 18 = ?$

5. (a) $15 \overline{)330}$ (b) $25 \overline{)725}$ (c) $22 \overline{)748}$ (d) $18 \overline{)748}$

6. (a) $63 \overline{)3654}$ (b) $75 \overline{)5325}$ (c) $64 \overline{)4608}$ (d) $75 \overline{)5625}$

1. There are 80 lb. of coal in a bushel. How many bu. in a ton?

2. Mr. Brown bought 2 tons of coal at 20¢ a bushel. How much did the coal cost him?

3. When eggs were 41¢ a dozen, how many full dozens could I buy for \$5.00, and how much change would remain?

4. 36 boys earned \$19.45 one Saturday. What was the average amount earned by each boy?

5. A box containing 115 lb. of candy was sent to be divided among 56 children. How many pounds did each get? How many pounds were left over?

6. There were 663 children at the school picnic. The merry-go-round made 17 trips to give each one a ride. How many children rode on each trip?

7. John picked from one tree 450 grapefruit of the size 56 to a box. How many boxes did they fill?

8. Large apples are often packed 64 to a box. How many such boxes can be packed out of a pile containing 600 apples?

9. If a street car can seat 52 persons and 20 more can stand in the aisle, how many cars will it require to carry 852 children to the school picnic?

10. A Michigan boy raised 346 cantaloupes in his thrift garden. How many crates of 15 melons to the crate were there in the crop?

1. Frank earned 35¢ a day helping at the newspaper stand. He worked until he had earned \$70.35. How many days did he work?

Think, "There are 2 35's in 70." $2 \times 35 = 70$. Subtract 70 from 70. You have no remainder. Bring down 3. There is no 35 in 3, and so you write zero (0) as the next quotient figure. Bring down 5.

Think, "There is 1 35 in 35." Write 1 in the quotient. Frank worked 201 days.

2. Edward's father has a space for a garden that contains 18,646 sq. ft. Edward laid it out in beds, each containing 81 sq. ft. How many beds did he make?

How many 81's in 186? Write the 2 and the 162. How many 81's in 244? Write the 3 and the 243. How many 81's in 16? Do not forget to write zero (0) in the quotient.

How many sq. ft. were left over?

Prove your answer.

Find the quotient. Prove your answer.

$$3. \begin{array}{r} 56 \overline{)28336} \end{array} \quad \begin{array}{r} 43 \overline{)13029} \end{array} \quad \begin{array}{r} 13 \overline{)8325} \end{array} \quad \begin{array}{r} 234 \overline{)23868} \end{array}$$

$$4. \begin{array}{r} 25 \overline{)36500} \end{array} \quad \begin{array}{r} 32 \overline{)6528} \end{array} \quad \begin{array}{r} 56 \overline{)8410} \end{array} \quad \begin{array}{r} 102 \overline{)3064} \end{array}$$

$$5. \begin{array}{r} 24 \overline{)12144} \end{array} \quad \begin{array}{r} 12 \overline{)1448} \end{array} \quad \begin{array}{r} 12 \overline{)17282} \end{array} \quad \begin{array}{r} 125 \overline{)12875} \end{array}$$

I. Find quotients.

21 $\overline{)378}$	21 $\overline{)420}$	21 $\overline{)735}$	21 $\overline{)567}$	21 $\overline{)525}$
21 $\overline{)441}$	21 $\overline{)672}$	21 $\overline{)861}$	21 $\overline{)945}$	21 $\overline{)609}$
21 $\overline{)882}$	21 $\overline{)651}$	21 $\overline{)504}$	21 $\overline{)693}$	21 $\overline{)294}$

II. Find quotients.

25 $\overline{)275}$	25 $\overline{)350}$	25 $\overline{)650}$	25 $\overline{)775}$	25 $\overline{)575}$
25 $\overline{)975}$	25 $\overline{)625}$	25 $\overline{)400}$	25 $\overline{)375}$	25 $\overline{)825}$
26 $\overline{)2626}$	26 $\overline{)5200}$	26 $\overline{)7852}$	26 $\overline{)5278}$	26 $\overline{)7878}$

III. Find quotients and remainders.

21 $\overline{)849}$	21 $\overline{)837}$	21 $\overline{)685}$	21 $\overline{)990}$	21 $\overline{)793}$
31 $\overline{)961}$	31 $\overline{)990}$	31 $\overline{)605}$	31 $\overline{)372}$	31 $\overline{)619}$
19 $\overline{)957}$	19 $\overline{)580}$	19 $\overline{)789}$	19 $\overline{)558}$	19 $\overline{)397}$

IV. Find quotients and remainders.

19 $\overline{)2185}$	19 $\overline{)3857}$	19 $\overline{)5795}$	19 $\overline{)7657}$	19 $\overline{)9557}$
19 $\overline{)6280}$	19 $\overline{)8178}$	19 $\overline{)5890}$	19 $\overline{)8019}$	19 $\overline{)4550}$
31 $\overline{)3875}$	31 $\overline{)7440}$	31 $\overline{)9145}$	31 $\overline{)9860}$	31 $\overline{)7950}$

V. Find quotients and remainders.

29 $\overline{)4756}$	29 $\overline{)6235}$	29 $\overline{)7950}$	29 $\overline{)5774}$	29 $\overline{)1198}$
41 $\overline{)8056}$	41 $\overline{)4510}$	41 $\overline{)9102}$	41 $\overline{)5094}$	41 $\overline{)5151}$
18 $\overline{)5938}$	18 $\overline{)7245}$	18 $\overline{)5599}$	18 $\overline{)8100}$	18 $\overline{)3958}$

VI. Find quotients and remainders.

41 $\overline{)80565}$	41 $\overline{)42795}$	41 $\overline{)12067}$	41 $\overline{)24149}$
49 $\overline{)50725}$	49 $\overline{)45281}$	49 $\overline{)15067}$	49 $\overline{)20090}$

1. A man paid \$8400 for a farm which was said to contain 84 acres. After measuring, it was found to contain 85 acres. How much did the land cost him an acre in dollars and cents?

$ \begin{array}{r} 98.82 \\ 85 \overline{)8400.00} \\ \underline{765} \\ 750 \\ \underline{680} \\ 700 \\ \underline{680} \\ 200 \\ \underline{170} \\ 30 \end{array} $	84 is almost 85. Try 9. 750 is a little less than 765 (9×85). Try 8. Compare the remainder with the divisor. 700 is a little larger than 680. Try 8. How many 85's in 200? The land cost a little more than \$98.82 an acre. Did it cost as much as \$98.83 an acre? How do you know?
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2. At a farm sale in April a man paid \$125 for the wheat in a 12-acre field. He harvested 172 bu. Did the wheat cost in April nearly 72¢ a bushel or nearly 73¢ a bushel?

3. Mr. White harvested 875 bushels of corn from a 14-acre field. Was that 62 bu., 63 bu., or exactly $62\frac{1}{2}$ bu. to the acre?

4. Mr. Johnson planted a 17-acre field in oats. He harvested 1000 bu. What was the average number of bushels harvested for each acre?

5. A tailor bought 36 yards of cloth for \$35.28. What was the cost a yard?

1. I received a 17-lb. pail of lard from the country and a bill for \$6.13. What was the price charged for a lb.?

2. A grocer paid \$253.44 for 264 dozen cans of tomatoes. What did they cost him a dozen? How much a can?

3. A dealer bought 24 barrels of apples for \$70.80. What did they cost a barrel?

4. I paid the butcher \$5.32 for a 14-pound ham. How much was that a pound?

5. Find the quotients.

$$(a) 17 \overline{)324} \quad (b) 24 \overline{)191} \quad (c) 24 \overline{)483} \quad (d) 24 \overline{)372}$$

$$(e) 32 \overline{)900} \quad (f) 32 \overline{)865} \quad (g) 32 \overline{)1476} \quad (h) 32 \overline{)584}$$

6. Write good problems about examples *e*, *f*, *g*, and *h*.

7. Find the quotients.

$$(1) 45 \overline{)31635} \quad 37 \overline{)29937} \quad 68 \overline{)61548} \quad 19 \overline{)3819}$$

$$(2) 29700 \div 96 = ? \quad 21710 \div 54 = ? \quad 25640 \div 32 = ?$$

$$(3) 21820 \div 24 = ? \quad 1264 \div 16 = ? \quad 735 \div 15 = ?$$

$$(4) 1424 \div 16 = ? \quad 1330 \div 14 = ? \quad 1326 \div 17 = ?$$

8. Books for 42 children in a fourth grade class cost \$18.90. What is the cost for each child?

9. The total weight of the 11 boys on a football team is 1232 pounds. What is the average weight of the boys?

How many dimes in 30 cents? $10¢ \overline{)30¢}$

How many 1 dollars in 3 dollars? $\$1.00 \overline{)\$3.00}$

Think $1 \overline{)3}$

How many \$1.00 in \$30.00?

$\$1.00 \overline{)\$30.00}$

Think $1 \overline{)30}$

State the quotients.

$10 \overline{)30}$ $20 \overline{)40}$ $30 \overline{)60}$ $40 \overline{)80}$ $50 \overline{)100}$ $60 \overline{)120}$

$10 \overline{)300}$ $20 \overline{)400}$ $30 \overline{)600}$ $40 \overline{)800}$ $50 \overline{)1000}$

1. How many bushels in a load of soft coal whose weight is 2280 lb.? There are 80 lb. of coal in a bushel.

$$\begin{array}{r} 28 \\ 80 \overline{)2280} \\ \underline{160} \\ 680 \\ \underline{640} \\ 40 \end{array}$$

Think, "There are two 8's in 22. There are two 80's in 220."

Think, "There are eight 8's in 68. There are eight 80's in 680."

There are 28 bu. and 40 lb. in 2280 lb.

2. A load of ear corn weighed 2275 pounds. How many bushel in it and how many pounds are left over? There are 70 lb. of ear corn in a bushel.

$$\begin{array}{r} 32 \\ 70 \overline{)2275} \\ \underline{210} \\ 175 \\ \underline{140} \\ 35 \end{array}$$

Think, "There are three 7's in 22. There are three 70's in 227."

Think, "There are two 7's in 17. There are two 70's in 170."

There are 32 bu. and 35 lb. in 2275 lb.

1. State the quotients and remainders.

100	$\overline{)305}$	200	$\overline{)410}$	400	$\overline{)875}$	500	$\overline{)1006}$
50	$\overline{)405}$	60	$\overline{)302}$	80	$\overline{)2407}$	70	$\overline{)2109}$
50	$\overline{)600}$	50	$\overline{)6000}$	40	$\overline{)2600}$	400	$\overline{)2600}$

2. An airplane went at the rate of 70 miles an hour. How long did it take it to go 1400 miles? Tell without using a pencil.

3. Frank wants to buy a Boy Scout outfit that costs \$48.50. He is saving \$1.20 a week. How long will it take him to save enough to buy his outfit?

4. The expenses for 40 boys in a summer camp were \$182.60. What was the expense for each boy?

5. You can buy a season ticket for the swimming pool for \$10.00. The pool is open 79 days. If you go every day, how much does each admission cost?

6. Frank paid 20¢ each day he went to the swimming pool. How many days could he go for \$10.00?

7. In 1919, 90 army trucks went from Washington, D. C., to San Francisco, a distance of 3110 miles, in 72 days. What was the average number of miles traveled a day?

8. 35 boys went to a summer camp. Their railroad fare was \$16.80. What was the fare of each?

9. A machine in a large post office canceled 41400 letters in exactly 46 minutes. How many letters on an average were canceled a minute?

When the divisor is 99 or 98, think of it as 100 to help you find the quotient quickly; when it is 89 or 88, think of it as 90; and so on. Use the real divisor when multiplying.

1. All the people who live in Ames Place want to plant shade trees about their homes. A nurseryman sent them 100 trees for \$125.75. Only 98 of the trees could be used. What was the cost of each tree?

Think how many 100's in 125 to find the first quotient figure. Multiply 98 by 1 and subtract.

$$\begin{array}{r} \$1.28 \\ 98 \overline{) \$125.75} \end{array}$$

Think how many 100's in 277 for the next quotient figure. Multiply 98 by 2 and subtract.

$$\begin{array}{r} 98 \\ \underline{277} \\ 196 \end{array}$$

Think how many 100's in 815 for the next quotient figure. Multiply 98 by 8 and subtract.

$$\begin{array}{r} 815 \\ \underline{784} \\ 31 \end{array}$$

Each tree cost a little more than \$1.28.

2. The Franklin School has 859 children. There are 19 rooms in the school. What is the average number of children for each room?

3. Prove your answer for each of these.

$89 \overline{) 5429}$	$29 \overline{) 899}$	$49 \overline{) 1274}$	$99 \overline{) 9801}$
$99 \overline{) 7524}$	$59 \overline{) 3599}$	$69 \overline{) 4623}$	$78 \overline{) 1950}$
$49 \overline{) 3528}$	$29 \overline{) 3016}$	$109 \overline{) 8066}$	$129 \overline{) 5418}$

1. Divide 2310 by 42.

$$\begin{array}{r} 55 \\ 42 \overline{)2310} \\ \underline{210} \\ 210 \end{array}$$

Try 5, because 23 is a little more than $\frac{1}{2}$ of 42.

The second dividend is equal to the last product. The next quotient figure is 5. Do not multiply. Your answer is 55.

2. Divide 2948 by 67. Shorten your work.

3. Divide 1485 by 45. Shorten your work.

4. Divide 5899 by 67.

$$\begin{array}{r} 88 \\ 67 \overline{)5899} \\ \underline{536} \\ 539 \\ \underline{536} \\ 3 \end{array}$$

Try 8, because 58 is not near enough to 67 to try 9.

The second dividend is only a little larger than the last product. Write 8 for the next quotient figure. You have already multiplied 67 by 8. Write the last product and the remainder.

5. Divide 4325 by 56. Shorten your work.

6. Divide 3168 by 66. Shorten your work.

7. Divide 8228 by 34.

$$\begin{array}{r} 242 \\ 34 \overline{)8228} \\ \underline{68} \\ 142 \\ \underline{136} \\ 68 \end{array}$$

Try 2 for the first quotient figure. Why?

Try 4 for the second quotient figure. Why?

How do you know the last quotient figure is 2 without a remainder?

8. Divide 22592 by 64. Shorten your work.

To prove long division multiply the divisor by the quotient and add the last remainder.

$ \begin{array}{r} 38 \\ 35 \overline{)1336} \\ \underline{105} \\ 286 \\ \underline{280} \\ 6 \text{ Rem.} \end{array} $	$ \begin{array}{r} 38 \\ 35 \\ \hline 190 \\ 114 \\ \hline 1330 \\ 6 \\ \hline 1336 \end{array} $
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Find the quotients. Prove your answers.

	a.	b.	c.	d.
1.	$36 \overline{)2484}$	$36 \overline{)2844}$	$26 \overline{)1534}$	$78 \overline{)2808}$
2.	$36 \overline{)3564}$	$27 \overline{)1998}$	$77 \overline{)2166}$	$25 \overline{)1960}$
3.	$89 \overline{)5429}$	$75 \overline{)1875}$	$29 \overline{)1890}$	$16 \overline{)1264}$
4.	$84 \overline{)5460}$	$56 \overline{)1988}$	$32 \overline{)3136}$	$24 \overline{)1872}$
5.	$98 \overline{)7350}$	$49 \overline{)3040}$	$95 \overline{)5225}$	$39 \overline{)3008}$

A DIVISION TEST

Do as many of these examples as you can in exactly 15 minutes. Prove your answers.

1.	2.	3.	4.
$73 \overline{)318061}$	$37 \overline{)321604}$	$29 \overline{)214542}$	$92 \overline{)243340}$
5.	6.	7.	8.
$54 \overline{)142830}$	$45 \overline{)393255}$	$86 \overline{)647924}$	$68 \overline{)474776}$

Do the work in full, noting quotients and remainders.

21	$\overline{231}$	21	$\overline{441}$	21	$\overline{756}$	21	$\overline{945}$	21	$\overline{1302}$	31	$\overline{1333}$
31	$\overline{1302}$	31	$\overline{1395}$	31	$\overline{1736}$	32	$\overline{1120}$	32	$\overline{1440}$	32	$\overline{1792}$
22	$\overline{748}$	22	$\overline{792}$	41	$\overline{1394}$	42	$\overline{1470}$	51	$\overline{1275}$	52	$\overline{1820}$
52	$\overline{2860}$	52	$\overline{4680}$	41	$\overline{2583}$	41	$\overline{3075}$	61	$\overline{4392}$	62	$\overline{4464}$
61	$\overline{5795}$	36	$\overline{2144}$	25	$\overline{1432}$	45	$\overline{1125}$	24	$\overline{1675}$	46	$\overline{2392}$
54	$\overline{1897}$	75	$\overline{4275}$	56	$\overline{5220}$	65	$\overline{2925}$	64	$\overline{2240}$	23	$\overline{7825}$
32	$\overline{9664}$	35	$\overline{7519}$	43	$\overline{9675}$	42	$\overline{10988}$	25	$\overline{5275}$		
30	$\overline{6480}$	32	$\overline{6097}$	42	$\overline{8572}$	56	$\overline{4100}$	42	$\overline{12810}$		
50	$\overline{5568}$	60	$\overline{12150}$	52	$\overline{5780}$	71	$\overline{5160}$	35	$\overline{7245}$		
41	$\overline{3731}$	21	$\overline{13187}$	60	$\overline{36120}$	62	$\overline{36120}$	72	$\overline{14560}$		
75	$\overline{15075}$	73	$\overline{14773}$	31	$\overline{6395}$	33	$\overline{6698}$	20	$\overline{16846}$		
43	$\overline{2800}$	51	$\overline{4885}$	22	$\overline{1738}$	61	$\overline{5598}$	111	$\overline{22422}$		
121	$\overline{36905}$	131	$\overline{96000}$	122	$\overline{24890}$	162	$\overline{22512}$				
121	$\overline{24805}$	132	$\overline{40260}$	220	$\overline{77000}$	225	$\overline{52875}$				
142	$\overline{45445}$	156	$\overline{47305}$	160	$\overline{84165}$	221	$\overline{89600}$				
250	$\overline{156250}$	200	$\overline{145000}$	240	$\overline{108025}$	320	$\overline{97632}$				
410	$\overline{143541}$	431	$\overline{174555}$	450	$\overline{202000}$	108	$\overline{25648}$				
216	$\overline{51296}$	110	$\overline{24205}$	330	$\overline{72615}$	250	$\overline{10100}$				

*Optional. Alert pupils may be tested with large numbers.

Can you work a row in 8 minutes?

25	$\overline{6775}$	94	$\overline{85352}$	37	$\overline{9990}$	86	$\overline{80066}$	73	$\overline{58765}$
49	$\overline{31409}$	68	$\overline{43520}$	52	$\overline{44252}$	37	$\overline{14467}$	86	$\overline{60372}$
94	$\overline{67774}$	25	$\overline{9750}$	68	$\overline{39508}$	49	$\overline{28420}$	52	$\overline{21112}$
73	$\overline{33653}$	28	$\overline{23548}$	54	$\overline{48708}$	39	$\overline{32760}$	67	$\overline{61707}$
45	$\overline{33795}$	76	$\overline{57000}$	93	$\overline{28458}$	82	$\overline{29602}$	57	$\overline{89250}$

1. Use of Zero. No remainder.

111	$\overline{10212}$	112	$\overline{12544}$	113	$\overline{14125}$	114	$\overline{23484}$
122	$\overline{61366}$	111	$\overline{238983}$	112	$\overline{67648}$	222	$\overline{112776}$
121	$\overline{317988}$	113	$\overline{186450}$	114	$\overline{1028280}$	112	$\overline{118272}$
222	$\overline{28638}$	105	$\overline{22050}$	110	$\overline{407550}$	125	$\overline{304500}$
115	$\overline{23000}$	202	$\overline{333300}$	121	$\overline{611050}$	133	$\overline{93898}$

2. Use of Zero. Remainders to some.

108	$\overline{14256}$	204	$\overline{44885}$	195	$\overline{45825}$	306	$\overline{70387}$
315	$\overline{96075}$	295	$\overline{87680}$	395	$\overline{159185}$	407	$\overline{95238}$
396	$\overline{180570}$	450	$\overline{105300}$	335	$\overline{135675}$	427	$\overline{10625}$
758	$\overline{1006049}$	468	$\overline{820479}$	906	$\overline{7821964}$	741	$\overline{3000102}$
405	$\overline{245870}$	365	$\overline{1462190}$	295	$\overline{899850}$	307	$\overline{1863740}$

*Optional

TEST IN DIVISION

For each example of Groups I and II write the quotient and remainder, if any, on a slip of paper placed under the example.

Copy the examples of Group III and perform the operation indicated.

GROUP I

Time 1 minute.

$3 \overline{)24}$	$8 \overline{)40}$	$7 \overline{)35}$	$8 \overline{)32}$	$9 \overline{)36}$	$9 \overline{)81}$	$6 \overline{)30}$	$8 \overline{)64}$
$9 \overline{)63}$	$3 \overline{)18}$	$4 \overline{)24}$	$8 \overline{)24}$	$4 \overline{)20}$	$3 \overline{)21}$	$6 \overline{)48}$	$9 \overline{)18}$
$4 \overline{)36}$	$5 \overline{)30}$	$4 \overline{)28}$	$6 \overline{)54}$	$7 \overline{)63}$	$7 \overline{)49}$	$5 \overline{)45}$	$6 \overline{)48}$

GROUP II

Time 5 minutes.

$6 \overline{)3678}$	$7 \overline{)7146}$	$8 \overline{)4889}$	$5 \overline{)1540}$
$9 \overline{)9745}$	$4 \overline{)3256}$	$3 \overline{)9750}$	$8 \overline{)9706}$
$8 \overline{)7560}$	$6 \overline{)7915}$	$7 \overline{)5830}$	$9 \overline{)8091}$

GROUP III

Time 15 minutes.

$12 \overline{)7252}$	$21 \overline{)8526}$	$60 \overline{)7500}$	$15 \overline{)4860}$
$25 \overline{)7805}$	$28 \overline{)7252}$	$14 \overline{)5749}$	$48 \overline{)9572}$



There are 11 boys on a football team.

1. What will shoes for the team cost at \$2 per pair?
2. What will suits for the team cost at \$4 apiece?
3. What will sweaters cost at \$3 apiece?
4. The team practiced 2 hours every school day for 7 weeks. How many hours did they practice?
5. They lost $\frac{1}{2}$ of the games they played. They won 4 games. How many games did they play?
6. Count by 11's to 132 beginning 11, 22, 33.
7. State the products.

$$\begin{array}{cccc} 2 \times 11 = __ & 6 \times 11 = __ & 9 \times 11 = __ & 7 \times 11 = __ \\ 5 \times 11 = __ & 8 \times 11 = __ & 3 \times 11 = __ & 4 \times 11 = __ \\ 1 \times 11 = __ & 10 \times 11 = __ & 12 \times 11 = __ & 11 \times 11 = __ \end{array}$$

8. State the missing number.

$11 \times \underline{\quad} = 66$	$11 \times \underline{\quad} = 33$	$11 \times \underline{\quad} = 55$	$11 \times \underline{\quad} = 22$
$11 \times \underline{\quad} = 99$	$11 \times \underline{\quad} = 44$	$11 \times \underline{\quad} = 77$	$11 \times \underline{\quad} = 88$
$11 \times \underline{\quad} = 121$	$11 \times \underline{\quad} = 110$	$11 \times \underline{\quad} = 11$	$11 \times \underline{\quad} = 132$

9. State the products.

[illegible]



1. Bert belongs to a boys' club. He pays 15¢ a week for club dues. What must he pay for 6 weeks? for 9 weeks? for 5 weeks? for 7 weeks? for 8 weeks?

2. Write the missing numbers.

2 15's = ___ 4 15's = ___ 6 15's = ___ 8 15's = ___

3 15's = ___ 5 15's = ___ 7 15's = ___ 9 15's = ___

3. Count by 15 to 150, beginning 15, 30, 45.

4. Tell as fast as you can the number of 15 cent articles that can be bought for each of these amounts: 90¢, 60¢, \$1.05, 30¢, 75¢, 45¢, 15¢, \$1.20, \$1.50, \$1.35.

5. Bert's older brother pays 25¢ a week club dues. What does he pay for 7 weeks? for 9 weeks? for 6 weeks? for 8 weeks? for 5 weeks?

6. Begin with 25 cents and count by 25's to \$3.00. Say 25 cents, 50 cents, 75 cents, and so on.

7. Tell the missing numbers.

2 25's = ___ 4 25's = ___ 6 25's = ___ 8 25's = ___

3 25's = ___ 5 25's = ___ 7 25's = ___ 9 25's = ___

8. Tell as fast as you can the number of quarters in each of these amounts: 75¢, \$1.25, 50¢, \$2.00, \$1.50, \$2.25, \$1.75, \$1.00, \$2.75, \$2.50.



The baker sells rolls, doughnuts, and small cakes by the dozen. He sells many dozens to the stores.

1. How many rolls should he send to a grocer who asks for 6 dozen? 8 dozen? 5 dozen? 7 dozen?

2. How many doughnuts should you get if you ask for 4 dozen? 8 dozen? 3 dozen? 7 dozen?

3. How many dozens were asked for by people who received these numbers of cakes?

36, 72, 24, 96, 48, 108, 60, 120, 84, 12

4. Ralph helped the baker fill his orders one Saturday. Here is what customers asked for. Tell how many each one should get. Do as many as you can without a pencil. Doz. means dozen.

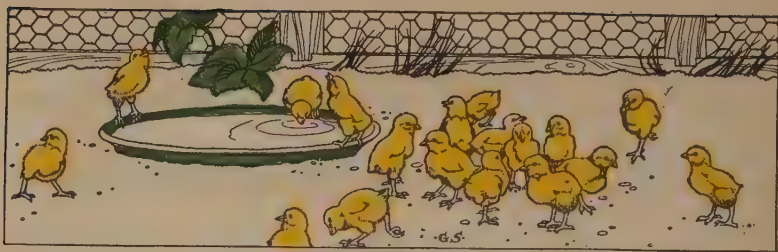
$4\frac{1}{2}$ doz. rolls	$6\frac{1}{2}$ doz. doughnuts	$8\frac{1}{2}$ doz. rolls
6 doz. cakes	$7\frac{1}{2}$ doz. rolls	5 doz. cakes
9 doz. doughnuts	7 doz. rolls	3 doz. doughnuts
$5\frac{1}{2}$ doz. doughnuts	$3\frac{1}{2}$ doz. doughnuts	4 doz. cakes
8 doz. cakes	2 doz. cakes	$9\frac{1}{2}$ doz. rolls
$2\frac{1}{2}$ doz. rolls		

5. The prices were

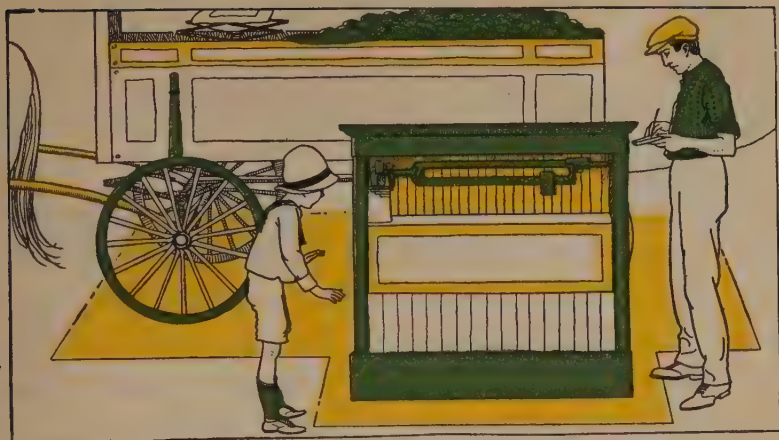
Rolls and cakes, 12¢ a doz. 6¢ a half doz.

Doughnuts, 15¢ a doz. 8¢ a half doz.

Tell what each order of rolls cost. What did each order of doughnuts cost? each order of cakes?



1. Harry and Frank have a small poultry business. They started with 47 baby chickens which they bought for 9¢ each. What was the total cost of the chickens?
2. Their chicken yard is 21 ft. long and 12 ft. wide. Draw the chicken yard to scale. Let $\frac{1}{4}$ inch = 3 ft.
3. The boys put poultry netting on the four sides of the chicken yard. How long a strip did they need?
4. Their fence was 4 feet high. How many square feet of netting did they need?
5. The netting cost 3¢ a square foot. What was the cost of the fence?
6. They sold 16 of their chickens when they were 6 months old at 35¢ apiece. How much did they get for them?
7. The next winter they sold 12 dozen eggs at 48¢ a doz. How much did they get for the eggs?
8. What did they pay for 18 pounds of chicken feed at 5¢ a lb.?



1. The wagon and the potatoes in this picture weigh 2910 lb. The empty wagon weighs 1230 lb.

a. What is the weight of the potatoes?

b. How many bushels are there if there are 60 lb. in one bushel?

c. How much did the grower get for them at 75¢ a bushel?

2. The grocer who bought the potatoes sold them at 40¢ a peck. How much did he make on one bu.? How much on the load of potatoes?

3. If you bought 5 bushels of potatoes from this grower, you could get them for 85¢ a bushel. How much would you save by buying 10 bushels from him instead of from the grocer?



1. Will Brown's father is an apple grower. Will knows the names of all the apple trees in his orchard. He counted 14 Rome Beauty trees, 16 Arkansas Black trees, and 20 Ben Davis trees. How many trees were there in the orchard?

2. Mr. Brown sold from the Rome Beauty trees 10 bbl. of best apples at \$3.75 a bbl.

6 bbl. of next best apples at \$3.00 a bbl.

How much did he get in all for these apples?

3. He sold from the Arkansas Black trees

9 bbl. of the best apples at \$3.75 a bbl.

8 bbl. of the next best apples at \$3.00 a bbl.

How much did he get in all for his Arkansas Black apples?

4. From his Ben Davis trees he sold

11 bbl. of the best apples at \$3.50 a bbl.

7 bbl. of the next best apples at \$2.75 a bbl.

How much did he get in all for his Ben Davis?

5. How many barrels of apples did he get from all his trees?

6. What was the average number of barrels for each tree?



1. The big circus tent has seats for 6010 people. How many empty seats are there when there are 5598 people present?
2. 1528 people paid 75¢ apiece for their seats. How much was received for these seats?
3. 2460 people paid 50¢ apiece for their seats. How much was received for these seats?
4. 1478 tickets at 25¢ apiece were sold. How much was received for all the 25¢ seats?
5. Jim, the elephant with this circus, weighs 3826 lb. How many boys weighing 75 lb. each would it take to weigh as much as the elephant?
6. Jim is 9 ft. high. His keeper is 5 ft. 11 in. tall. The elephant is how much taller than the keeper?
7. Jim eats a bale of hay every day. An average bale weighs 100 lb. In how many days will Jim eat a ton?
8. How much a day does it cost for Jim's hay when hay is worth \$30 a ton?



9. Jim also eats a peck of oats in a day. How many days will it take to eat 5 bushels?

10. The keeper pays 85¢ a bushel for oats. What will 5 bushels cost?

11. If Jim eats 5 bushels of oats and a ton of hay in 20 days, what will his feed cost a day?

12. The fat man in the circus weighs 435 lb. The fat woman weighs 468 lb. How much do both weigh?

13. How much less than $\frac{1}{2}$ a ton do they weigh?

14. The giant with the circus is 7 ft. 3 in. tall. Little Tom is only 3 ft. 2 in. tall. The giant is how much taller than Little Tom?

15. The circus performance began at 7:15 and closed at 9:50. How long did it last?

1. George carried water to the elephants and earned 75¢ a day for 4 days. How much did he earn in all?

2. Phil sold peanuts at the circus. He sold 156 bags at 5¢ each. How much money did he get?

3. Tom sold popcorn. He sold 128 packages at 5¢ each. How much money did he get?

4. Edward had a lemonade stand near the circus. How much did he get for 85 glasses at 5¢ each?

5. Edward bought 3 dozen lemons at 25¢ a dozen and 4 pounds of sugar at 11¢ a lb. to make the lemonade. What did the lemonade cost?

6. How much did Edward make on his lemonade?

7. Sam worked $5\frac{1}{2}$ hr. carrying chairs. He earned 20¢ an hour. How much did he make in all?

8. Harry gave out programs at the gate. He worked from 2:15 to 3:30 in the afternoon and from 6:45 to 8:00 in the evening. How many hours did he work in one day? How many hours in 4 days?

9. How much did he earn at 20¢ an hour?

10. Bert sold tickets on Saturday for the merry-go-round at 5¢ apiece. When he counted his money, he had \$17.85. How many tickets had he sold?

11. Jack gathered up empty soda bottles and waste paper. He worked 3 hr. and earned 50¢. How much was that an hour?

1. Will put all the money he received in his savings bank. At the end of 3 months he opened his bank. He had 36 pennies, 12 nickels, 7 dimes, 2 quarters, and a half dollar. How much had he in all?

2. Arthur saves 10¢ a day by walking to school. How much does he save in a week?

3. How long will it take him to save enough to buy a rifle that costs \$2.90?

4. The grocer charges 10¢ each time he delivers groceries. Ted saves his mother 20¢ a week by carrying her groceries home. How long will it take him to save \$2.50 to buy a sweater?

5. Lead pencils can be bought for 5¢ apiece or for 45¢ a dozen. How much do you save by buying a dozen?

6. The Tiger baseball team can buy suits at \$1.75 each or at \$14.00 for the nine suits. How much do they save by buying together?

7. If I buy 50 car tickets at one time, I can get them for \$3.50. If I buy single tickets, I must pay 8¢ apiece for them. How much more do I pay for each ride by buying single tickets?

8. Edward found that he could buy an overcoat at one store for \$12.00 and the same kind of a coat at another store for \$10.85. How much does he save by going to the second store?

9. The butcher near Rob's home charges 22¢ a lb. for sausage. Rob can get the same kind at a downtown market for 18¢. How much does Rob save on 8 lb. by going downtown for it?

10. Paul wants a watch. He can get the kind he wants near his home for \$2.50, or he can get the same kind in another city for \$2.25 and 6¢ more for postage. How much will he save by sending away for the watch?

11. Ida saw a dress in a store that was marked \$4.98. She bought 4 yd. of the same material at 36¢ a yd. and 3 yd. of lace at 14¢ a yd. and made a dress just like it. What did her dress cost? How much did she save by making the dress instead of buying it?

RENT PROBLEMS

1. John's father pays 25¢ every 3 months for the rent of a box at the post office. What is the rent of the box for a year?

2. Mr. Allen pays \$40 a month rent for his flat. His family goes away for 3 months each summer, and he rents the flat and furniture to Mr. Taylor while they are away for \$50 a month. How much rent does Mr. Allen pay in a year? How much does he get from Mr. Taylor?

3. Frank's mother pays \$26 a month rent for her flat. How much rent does she pay in a year?

4. Tom's mother pays \$37 a month rent for her flat. What does she pay in a year?

5. She rents one room to a man who pays her \$5.50 a week for it. How much does she get from him in a year of 52 weeks?

6. How much of the rent for the year does Tom's mother really pay?

7. What does her rent cost her for one month?

8. Will's father owns an apartment house. There are 8 families who live in it. Two of them pay \$37 a month rent; 2 pay \$35 a month; 2 pay \$32.50 a month; and 2 pay \$30 a month. How much rent does Will's father get for his apartment in a year when all the apartments are rented?

9. Mr. Johnson pays \$50 a month rent for a house and \$10 a month for a garage. How much does he pay for rent in a year?

10. Some boys rented a tennis court for 3 months. They paid \$18 for it. If 12 boys used the court, how much should each boy pay?

11. Ruth went skating 15 times during the winter. She rented a pair of skates each time for 25¢. How much would she have saved if she had bought a pair of skates for \$2.50?

1. Some boys went on a six day camping trip. Here are the amounts spent for food each day:

(1)	(2)	(3)	(4)	(5)	(6)
\$4.20	\$.35	\$2.80	\$2.56	\$2.75	\$.90

(1) What was the average amount spent per day?

(2) If they spend the same average amount per day for food on a 9 day camping trip, what will their food cost?

2. The Pershing School children wrote invitations for their school party. The 28 children in the second grade wrote 140, 34 children in the third grade wrote 204, and 42 children in the fourth grade wrote 252. What was the average number written by each child in the second grade? in the third grade? in the fourth grade?

3. Some children have a savings club. They want to know which one will have the most money saved in 10 weeks.

Here are the amounts each saved in 4 weeks:

	Paul	Tom	Ida	Edward	Arthur	Nell
1.	16¢	25¢	9¢	15¢	26¢	12¢
2.	15¢	11¢	18¢	21¢	24¢	19¢
3.	22¢	16¢	15¢	23¢	13¢	26¢
4.	19¢	20¢	22¢	17¢	21¢	23¢

What was the average amount saved weekly by Paul? Tom? Ida? Edward? Arthur? Nell?

Here are some problems that were made by fourth grade children about traveling. How fast can you find the answers to them?

1. Bert said, "I can go 24 miles in 4 hr. on my bicycle. How far can I go in 3 hr.?"

2. Jane said, "We rode 300 miles in 4 days. How far could we go in 2 days?"

3. Sam said, "My father went up 10,560 ft. in a balloon. How many miles high did he go?"

4. Ned said, "My cousin went across the ocean on a steamer that traveled 22 miles in an hour. The distance was 3190 miles. How many hours did it take to make the journey? How many days did it take?"

5. Sue said, "From our house to the river is 5 miles. We left at 2:15 and reached the river at 3:05. How long did it take us to ride 5 miles?"

6. John said, "My father traveled 168 miles in his automobile in 12 hours. What was the average number of miles he traveled in an hour?"

7. Charles said, "My father went to New York on a train that went a mile a minute. How many hours did it take the train to go 907 miles?"

8. Ruth said, "My uncle flew 698 miles in an airplane that went at the rate of 70 miles an hour. How long did the trip take?"

1. The teacher at a city playground kept account of the number of children who attended each day. On Monday there were 127; on Tuesday, 135; on Wednesday, 146; on Thursday, 142; on Friday, 157; and on Saturday, 96. What was the average number of children present a day?

2. Paul saves 15¢ of his spending money each week. How much will he save in a year of 52 weeks?

3. Mrs. White buys 2 qt. of milk every day. How many quarts will she buy in October? in November?

4. In October and November milk was 16¢ a qt. How much did Mrs. White pay for milk in that time?

5. Kate has saved \$1.25. How many 25¢ thrift stamps can she buy for it?

6. Frank's hens laid 36 eggs in one day. How much did he get for the eggs at 48¢ a dozen?

7. A farmer went to town with 18 one-gallon cans of maple syrup. He sold them for \$25.20. What was the price a gallon?

8. Here are the numbers of soldiers in the 10 companies of a regiment: 195, 186, 188, 192, 199, 196, 210, 220, 185, 179. How many soldiers in the regiment?

9. Find the average number for each company.

10. A city playground is 246 ft. long and 108 ft. wide. How many sq. ft. in its area?

11. The playground tennis court is 78 ft. long and 36 ft. wide. How many sq. ft. does it cover?

12. A pint of ink will fill 10 ink wells in our schoolroom. How many can be filled from a gallon of ink?

13. How many tons of coal are needed during the 3 winter months to heat a school building that uses 27 tons of coal a month? What will the coal cost at \$9 a ton?

14. What must I pay for a 17-lb. turkey at 29¢ a lb.?

15. Jane's mother bought 10 yards of gingham for dresses. She made 2 dresses and used $3\frac{1}{2}$ yd. of goods in each. How many yards of goods had she left?

16. Dave bought a suit of clothes for \$6.95, an overcoat for \$10.50, and a hat for \$1.98. What was the cost of all?

17. I bought a half dozen of 40 cent oranges and gave the grocer a \$1.00 bill. How much change should I get?

18. Paul earns \$1.20 a week by helping the grocer. How long will it take him to earn enough to buy an electric engine that costs \$9.60?

19. How much ribbon should Nell buy when she wants $2\frac{1}{2}$ yd. for a sash, $1\frac{1}{2}$ yd. for her hair, and $1\frac{1}{2}$ yd. for a hat?

20. A wholesale grocer sold 28 sacks of potatoes at \$1.50 a sack. What did he get for the potatoes?

21. James bought 2 baskets of grapes at 35¢ a basket, and gave the storekeeper \$1.00. How much change should he get?

22. Bert's father gave him a one-acre field. One year he raised 80 bushels of corn, which he sold at \$1.30 a bushel. The next year he raised 125 bushels of potatoes, which he sold at \$1.10 a bushel. How much money did he make on each crop?

23. Bess planted 35 tomato plants. She sold 200 lb. of tomatoes at 6¢ a lb. and 500 lb. at 5¢ a lb. How much did she make in all?

24. Jane wishes to make 3 doll dresses of the same size. She has only two yards of goods. Draw a line and show what part of a yard she can use for each dress.

25. Five people together drink three quarts of milk in one day. If they share equally, how much does each one drink?

26. A street car that was due at 6:58 arrived at 7:02. How many minutes late was it?

27. How late were these cars?

Due	Arrived	Due	Arrived	Due	Arrived
6:10	6:21	5:55	6:04	4:47	4:56
5:27	5:34	5:45	5:53	7:56	8:05



Mr. Martin had a special sale of things for children. They could buy things cheaper than usual if they bought several of one kind. How much did children who bought at these prices pay for one of each article?

Whistles 3 for 5¢. Think $3 \overline{)5}$. Say, " $1\frac{2}{3}$ ¢."

Balls 3 for 10¢. Think $3 \overline{)10}$. Say, " $3\frac{1}{3}$ ¢."

Cups and Saucers 6 for 25¢. Think $6 \overline{)25}$. Say, " $4\frac{1}{6}$ ¢."

Marbles 3 for 1¢. Say, " $\frac{1}{3}$ ¢."

Picture post cards 4 for 5¢.

Sets of dominoes 3 for 25¢.

Toy pistols 2 for 25¢.

Paper dolls 6 for 10¢. Say, " $1\frac{2}{3}$ ¢" instead of $1\frac{4}{6}$ ¢.

Kites 4 for 25¢.

Jack stones 4 for 1¢.

Jumping ropes 3 for 10¢.

Whistling birds 2 for 5¢.

Mr. Martin made special prices for goods when large quantities were bought. Ben learned to tell the cost of a small quantity when the cost of a large quantity was given. Mr. Martin said that Ben never made a mistake. Can you do as well?

1. Finest whole head rice was sold at these prices: 10-lb. bag \$1.79. 5-lb. bag 93¢. 2-lb. bag 39¢.

(1) Ben said that, if you bought a 10-lb. bag, you paid $17\frac{9}{10}$ ¢ for a lb.

This is how he found out.

10 $\overline{)179}$ He said, "17 = 1 ten and 7 remainder."
He wrote the 1 over the 7 in the quotient. He said, "79 = 7 tens and 9 remainder."
He wrote the 7 over the 9 in the quotient. He wrote 9, the remainder, over the divisor like this, $\frac{9}{10}$.

(2) Ben said that, if you bought a 5-lb. bag, you paid $18\frac{3}{5}$ ¢ for a lb. of rice. Divide 93 by 5, and see if he is right. Write the remainder over the divisor as Ben did.

(3) Ben said that, if you bought a 2-lb. bag, you paid $19\frac{1}{2}$ ¢ for a lb. Was he right?

2. Here are Mr. Martin's prices for yellow cornmeal: 10-lb. bag 71¢; 5-lb. bag 37¢.

(1) Find what you paid for a lb. when you bought a 10-lb. bag, and when you bought a 5-lb. bag.

(2) What would be the cost of two 5-lb. bags? How much would you save by buying a 10-lb. bag instead of two 5-lb. bags?

3. Lima beans packed in bags cost \$1.04 for a 5-lb. bag. Tell without using a pencil what you would pay for 1 lb. when you bought a 5-lb. bag. Think the last remainder over the divisor.

4. Small white beans packed in bags cost \$1.14 for a 10-lb. bag and 59¢ for a 5-lb. bag.

(1) Tell without using a pencil what you would pay for a lb. when you bought a 10-lb. bag. Think the last remainder over the divisor in telling your answer.

(2) What would you pay for a lb. when you bought a 5-lb. bag? Think the last remainder over the divisor in telling your answer.

(3) What would two 5-lb. bags cost?

(4) How much would you save by buying one 10-lb. bag instead?

5. White Rolled Oats cost 74¢ for a 10-lb. bag and 38¢ for a 5-lb. bag.

(1) What would you pay for a lb. when you bought a 10-lb. bag?

(2) What would you pay for a lb. when you bought a 5-lb. bag?

(3) How much would you save by buying one 10-lb. bag instead of two 5-lb. bags?

At the "Two for One" Sale customers are given two articles for the cost of one and a little more.

1. Two of these articles sell for the cost of one and 1¢ more.

Fine soap.....14¢ a cake	Buttons.....12¢ a card
Toothbrushes .21¢ each	Hairpins..... 9¢ a box
Tooth paste...17¢ a tube	Shoe laces..... 8¢ a pair
Tape.....16¢ a roll	Thimbles.....15¢ each
Needles.....10¢ a pkg.	Pins.....11¢ a box
Handbrushes..13¢ each	Hooks and eyes 7¢ a card

At this sale you can get 2 cakes of soap for 14¢ and 1¢.

(1) Nell bought 2 handbrushes. What did each brush cost her?

(2) Kate bought 2 boxes of hairpins. What did each box cost?

(3) Tell the cost of 1 to customers who bought 2 of each of these. When you have a remainder, write it over the divisor.

2 tubes of tooth paste	2 cards of buttons
2 rolls of tape	2 toothbrushes
2 packages of needles	2 cakes of soap
2 cards of hooks and eyes	2 thimbles
2 boxes of pins	2 pairs of shoe laces

2. Two of these articles can be bought for the cost of one and 25¢ more. Write the cost of 2, then find the cost of 1. When you have a remainder, write it over the divisor.

Prices		Prices	
Men's slippers, pair..	\$1.00	Girl's sweaters....	\$1.25
Boys' winter caps...	.85	Women's aprons...	.75
Boys' blouses.....	.95	Boys' gloves.....	.90
Men's work shirts....	1.05	Men's belts.....	.80

3. Two of these articles can be bought for the cost of one and 15¢ more. Write the cost of 2, then find the cost of 1.

Wash boards.....	59¢	Oil mops.....	69¢
Clothes baskets...	78¢	Bread boxes.....	83¢
Wash tubs.....	96¢	Brooms.....	83¢

4. State the missing numbers.

$$\begin{array}{llll}
 7 \div 2 = 3\frac{1}{2} & 8 \div 3 = 2\frac{2}{3} & 21 \div 4 = 5\frac{1}{4} & 17 \div 6 = 2\frac{5}{6} \\
 15 \div 2 = \underline{\quad} & 13 \div 3 = \underline{\quad} & 19 \div 4 = \underline{\quad} & 19 \div 6 = \underline{\quad} \\
 21 \div 2 = \underline{\quad} & 19 \div 3 = \underline{\quad} & 23 \div 4 = \underline{\quad} & 31 \div 6 = \underline{\quad}
 \end{array}$$

5. State the quotients. Think $\frac{2}{4} = \frac{1}{2}$, $\frac{3}{6} = \frac{1}{2}$, $\frac{4}{6} = \frac{2}{3}$, $\frac{4}{8} = \frac{1}{2}$, $\frac{6}{8} = \frac{3}{4}$.

$$\begin{array}{llll}
 22 \div 4 = 5\frac{1}{2} & 21 \div 6 = 3\frac{1}{2} & 22 \div 6 = 3\frac{2}{3} & 30 \div 8 = 3\frac{3}{4} \\
 14 \div 4 = 3\frac{1}{2} & 15 \div 6 = \underline{\quad} & 34 \div 6 = \underline{\quad} & 22 \div 8 = \underline{\quad} \\
 19 \div 4 = \underline{\quad} & 33 \div 6 = \underline{\quad} & 53 \div 6 = \underline{\quad} & 59 \div 8 = \underline{\quad} \\
 31 \div 4 = \underline{\quad} & 20 \div 6 = \underline{\quad} & 47 \div 6 = \underline{\quad} & 45 \div 8 = \underline{\quad} \\
 39 \div 4 = \underline{\quad} & 44 \div 6 = \underline{\quad} & 59 \div 6 = \underline{\quad} & 23 \div 8 = \underline{\quad}
 \end{array}$$

Percale.....	16¢ a yd.	Linen.....	40¢ a yd.
Gingham....	24¢ a yd.	Muslin.....	12¢ a yd.
Lawn.....	30¢ a yd.	Shirting....	36¢ a yd.

1. It takes $3\frac{1}{2}$ yd. of gingham to make a dress for Nell. Find the cost of the gingham.

24¢ Write 3×24 for the cost of 3 yd.

3½ Write $\frac{1}{2}$ of 24 for the cost of $\frac{1}{2}$ yd.

72 Add the cost of 3 yd. and the cost of $\frac{1}{2}$ yd.

12

84¢ You have the cost of $3\frac{1}{2}$ yd.

2. Find the cost of $2\frac{2}{3}$ yd. of fine lawn.

30¢

2⅔ Write the cost of 2 yd.

60 Write the cost of $\frac{2}{3}$ yd.

20 Add the cost of 2 yd. and the cost of $\frac{2}{3}$ yd.

80¢ You have the cost of $2\frac{2}{3}$ yd.

3. Find the cost of

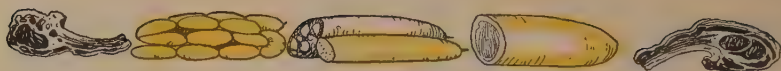
$6\frac{1}{2}$ yd. shirting	$5\frac{1}{4}$ yd. linen	$3\frac{1}{3}$ yd. lawn
$5\frac{2}{3}$ yd. shirting	$2\frac{2}{3}$ yd. gingham	$2\frac{3}{4}$ yd. muslin
$6\frac{3}{4}$ yd. gingham	$8\frac{1}{2}$ yd. percale	$4\frac{1}{4}$ yd. gingham

4. State the products.

$$2\frac{1}{2} \times 10 = __ \quad 3\frac{1}{2} \times 30 = __ \quad 2\frac{1}{3} \times 12 = __ \quad 2\frac{1}{4} \times 16 = __ \\ 5\frac{1}{3} \times 15 = __ \quad 4\frac{1}{2} \times 20 = __ \quad 3\frac{2}{3} \times 15 = __ \quad 3\frac{3}{4} \times 12 = __$$

5. Write the products.

$$5\frac{3}{4} \times 40 = __ \quad 7\frac{1}{4} \times 16 = __ \quad 8\frac{2}{3} \times 18 = __ \quad 5\frac{2}{3} \times 21 = __ \\ 6\frac{2}{3} \times 24 = __ \quad 9\frac{3}{4} \times 24 = __ \quad 7\frac{3}{4} \times 20 = __ \quad 6\frac{3}{4} \times 32 = __$$



Here are the prices per pound a butcher asked for meat on a special sale day.

Spring Lamb.....	20¢	Boiled Ham.....	40¢
Pork Roast.....	30¢	Veal Roast.....	26¢
Sausage.....	20¢	Minced Ham.....	24¢

1. How fast can you tell the cost of these orders without a pencil?

- | | |
|------------------------------------|------------------------------------|
| (1) $5\frac{1}{2}$ lb. spring lamb | (9) $4\frac{1}{2}$ lb. pork roast |
| (2) $7\frac{1}{2}$ lb. pork roast | (10) $3\frac{3}{4}$ lb. boiled ham |
| (3) $6\frac{1}{4}$ lb. sausage | (11) $6\frac{1}{2}$ lb. veal roast |
| (4) $1\frac{3}{4}$ lb. boiled ham | (12) $\frac{1}{2}$ lb. minced ham |
| (5) $8\frac{1}{2}$ lb. veal roast | (13) $2\frac{1}{2}$ lb. sausage |
| (6) $1\frac{1}{2}$ lb. minced ham | (14) $\frac{3}{4}$ lb. boiled ham |
| (7) $2\frac{1}{4}$ lb. minced ham | (15) $7\frac{1}{4}$ lb. veal roast |
| (8) $5\frac{1}{2}$ lb. sausage | (16) $6\frac{3}{4}$ lb. sausage |

2. Find the missing numbers.

$\frac{1}{2}$ of \$1.20 = —	$\frac{1}{3}$ of \$1.50 = —	$\frac{1}{5}$ of 200 = —
$\frac{1}{4}$ of \$2.80 = —	$\frac{2}{3}$ of \$2.10 = —	$\frac{4}{5}$ of 25 = —
$\frac{3}{4}$ of 144 = —	$\frac{3}{8}$ of 480 = —	$\frac{3}{5}$ of 75 = —
$\frac{1}{8}$ of 640 = —	$\frac{5}{8}$ of 160 = —	$\frac{5}{6}$ of 24 = —

3. Multiply 84 by $2\frac{1}{2}$. By $3\frac{1}{4}$. By $5\frac{3}{4}$.

4. Multiply 69 by $3\frac{1}{3}$. By $6\frac{2}{3}$. By $5\frac{1}{3}$.

5. Multiply 168 by $2\frac{3}{4}$. By $3\frac{1}{8}$. By $3\frac{5}{8}$.

6. Multiply 279 by $6\frac{1}{3}$. By $4\frac{2}{3}$. By $5\frac{2}{3}$.

Here are the prices per lb. of meat on another sale day.

Bacon.....	28½¢	Veal Chops....	17½¢
Corned Beef....	13½¢	Rib Roasts....	22½¢
Pork Shoulder..	20½¢	Lamb Stew....	12½¢

1. What must I pay for 4 lb. of bacon?

\$.28½ Multiply 28 by 4 to get the cost of 4 lb.
 4 at 28¢.

 112 ½ of 4 is the cost of 4 lb. at ½¢.
 2 Add the cost of 4 lb. at 28¢ and the cost

 \$1.14 of 4 lb. at ½¢. You have the cost of 4 lb.
 at 28½¢.

Put \$ and a decimal point in the right places.

2. What must I pay for 6 lb. of corned beef?

\$.13½ Find the cost of 6 lb. at 13¢.
 6 Find the cost of 6 lb. at ½¢.

 78 Add the cost of 6 lb. at 13¢ and the cost
 3 of 6 lb. at ½¢.

 \$.81 You have the cost of 6 lb. at 13½¢.

Put \$ and a decimal point in the right places.

3. Write the cost of these orders.

- | | |
|-------------------------|-----------------------|
| (1) 8 lb. pork shoulder | (5) 6 lb. lamb stew |
| (2) 10 lb. veal chops | (6) 2 lb. bacon |
| (3) 8 lb. rib roast | (7) 4 lb. corned beef |
| (4) 8 lb. lamb stew | (8) 4 lb. bacon |

Mary helps in a dry goods store. Here are some of the things she can do. How many can you do?

1. Tell the cost of 2 yd., 3 yd., 4 yd., and 5 yd. of goods at these prices.



Muslin.....40¢, 50¢, 60¢ a yd.

Lawn.....18¢, 20¢, 24¢, 30¢ a yd.

Gingham....28¢, 35¢, 45¢ a yd.

Linen.....65¢, 85¢, 90¢ a yd.

Embroidery.17¢, 28¢, 36¢, 45¢ a yd.

Lace.....15¢, 25¢, 35¢, 45¢ a yd.

Ribbon..... 9¢, 17¢, 28¢, 35¢, 44¢ a yd.

2. Tell the cost of $\frac{1}{2}$ yd. and $\frac{1}{4}$ yd. at these prices.

Silk cord at 12¢, 20¢, 24¢ a yd.

Ribbon at 28¢, 40¢, 60¢ a yd.

Braid at 8¢, 16¢, 20¢ a yd.

Silk at 80¢, \$1.00, \$1.20, \$1.60 a yd.

Lace at 20¢, 40¢, 60¢ a yd.

3. Tell the cost of 12 inches of each of these. 12 inches is what part of a yd.?

Silk at \$1.50 a yd.

Ribbon at \$.60 a yd.

Lace at \$.90 a yd.

Braid at \$.24 a yd.

Gold cord at \$.45 a yd.

Satin at \$1.20 a yd.

Velveteen at \$.75 a yd.

Lining at \$.36 a yd.

4. Tell the cost of 24 inches of each of these.
24 inches is what part of a yard?

Cloth at.....\$3.00 a yd.

Linen at..... 1.50 a yd.

Velvet at.... 6.00 a yd.

Fur cloth at. 9.00 a yd.

Silk at..... 4.50 a yd.

5. Tell the cost of $\frac{1}{3}$ and $\frac{2}{3}$ of a dozen buttons that cost 60¢ a doz., 30¢ a doz., 15¢ a doz., 18¢ a doz., 24¢ a doz.

6. Tell the cost of $1\frac{1}{2}$ doz. of buttons at 60¢ a doz., at 40¢ a doz., at 48¢ a doz., at 24¢ a doz., at 50¢ a doz.

7. Tell the cost of $1\frac{1}{3}$ yards of lace at 45¢ a yd., at 90¢ a yd., at 48¢ a yd., at 21¢ a yd.

8. Tell the cost of $3\frac{1}{2}$ yd.

Muslin at 24¢ a yd.

Gingham at 36¢ a yd.

Shirting at 26¢ a yd.

Flannel at 80¢ a yd.

Silk mull at 40¢ a yd.

9. Tell the cost of $2\frac{1}{3}$ yd., and of $2\frac{2}{3}$ yd.

Lace at 42¢ a yd.

Cord at 27¢ a yd.

Braid at 33¢ a yd.

Ribbon at 21¢ a yd.

Elastic at 18¢ a yd.

Mr. Williams is going to sell his store. He wants to know the worth of all his goods. James helped him find the value of the dress goods.

1. He had $24\frac{3}{4}$ yd. of dress goods worth \$1.20 a yd. What was this worth?

\$1.20	Write $24 \times \$1.20$ for the cost of 24 yd.
<u>24$\frac{3}{4}$</u>	Write $\frac{3}{4}$ of \$1.20 for the cost of $\frac{3}{4}$ yd.
4 80	Add the cost of 24 yd. and the cost of
<u>24 0</u>	$\frac{3}{4}$ yd. You have the cost of $24\frac{3}{4}$ yd.
\$28.80	Put \$ and decimal point in their right
<u>.90</u>	places.
\$29.70	

2. What are $17\frac{3}{8}$ yd. of goods worth at 32¢ a yd.?

\$.32	Write the cost of 17 yd.
<u>17$\frac{3}{8}$</u>	Write the cost of $\frac{3}{8}$ yd.
2 24	
<u>3 2</u>	Add the cost of 17 yd. and the cost of
\$5.44	$\frac{3}{8}$ yd. You have the cost of $17\frac{3}{8}$ yd.
<u>.12</u>	Put \$ and a decimal point in their right
\$5.56	places.

3. Find the cost of each of these pieces of goods.

- | | |
|--------------------------------------|---------------------------------------|
| (1) $12\frac{3}{4}$ yd. at 60¢ a yd. | (6) $18\frac{1}{3}$ yd. at 18¢ a yd. |
| (2) $19\frac{1}{2}$ yd. at 70¢ a yd. | (7) $25\frac{3}{8}$ yd. at 24¢ a yd. |
| (3) $26\frac{1}{4}$ yd. at 80¢ a yd. | (8) $14\frac{2}{3}$ yd. at 30¢ a yd. |
| (4) $5\frac{1}{8}$ yd. at 16¢ a yd. | (9) $15\frac{3}{4}$ yd. at 20¢ a yd. |
| (5) $16\frac{5}{8}$ yd. at 40¢ a yd. | (10) $24\frac{5}{8}$ yd. at 32¢ a yd. |

The fourth grade children selected the best one in the class to act as fruit and vegetable salesman. He was the one of the class who could give the correct answers to these most rapidly. How well can you do them?

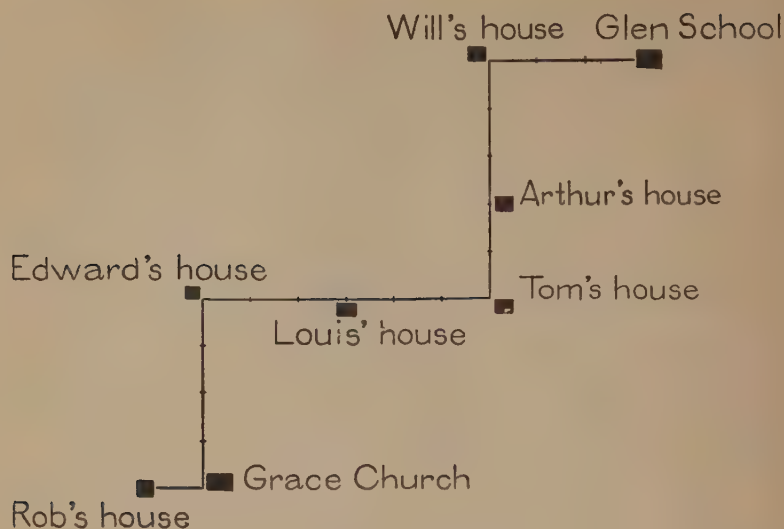
- | | |
|--------------------------|--------------------------|
| 7 pk.=__ bu. and __ pk. | 13 qt.=__ pk. and __ qt. |
| 9 pk.=__ bu. and __ pk. | 25 qt.=__ pk. and __ qt. |
| 9 qt.=__ pk. and __ qt. | 25 pk.=__ bu. and __ pk. |
| 17 qt.=__ pk. and __ qt. | 11 pk.=__ bu. and __ pk. |
| 22 qt.=__ pk. and __ qt. | 11 qt.=__ pk. and __ qt. |
| 15 pk.=__ bu. and __ pk. | 15 qt.=__ pk. and __ qt. |

Henry could give the answers to these most quickly. He was given charge of selling the liquids.

- | | |
|--------------------------|---------------------------|
| 11 pt.=__ qt. and __ pt. | 25 qt.=__ gal. and __ qt. |
| 21 pt.=__ qt. and __ pt. | 15 qt.=__ gal. and __ qt. |
| 7 pt.=__ qt. and __ pt. | 35 qt.=__ gal. and __ qt. |
| 19 pt.=__ qt. and __ pt. | 17 qt.=__ gal. and __ qt. |
| 15 pt.=__ qt. and __ pt. | 27 qt.=__ gal. and __ qt. |

James was put in charge of selling dress goods. He found the correct answers to these most rapidly.

- | | |
|----------------------------------|---------------------------------|
| $\frac{1}{3}$ doz. at 45¢ a doz. | 2 yd. at 60¢ a yd. |
| $\frac{1}{3}$ yd. at 30¢ a yd. | $2\frac{1}{2}$ yd. at 40¢ a yd. |
| $\frac{1}{3}$ yd. at 51¢ a yd. | $3\frac{1}{2}$ yd. at 54¢ a yd. |
| $2\frac{1}{3}$ yd. at 15¢ a yd. | $2\frac{1}{3}$ yd. at 18¢ a yd. |
| $3\frac{1}{3}$ yd. at 69¢ a yd. | $2\frac{2}{3}$ yd. at 21¢ a yd. |
| $2\frac{2}{3}$ yd. at 24¢ a yd. | $3\frac{2}{3}$ yd. at 36¢ a yd. |



$\frac{1}{4}$ in. = 80 rods

This plan shows the homes of six boys who go to the Glen School. Each fourth of an inch on the plan stands for 80 rods.

1. How many rods is it from Rob's house to Grace Church?

320 rods = 1 mile

2. How many rods from Grace Church to Edward's house? How many miles?

3. What part of a mile is it from Rob's house to Grace Church?

4. How many rods is it from Edward's house to Louis's house? How many miles is it?

5. How many miles must Tom walk to get to church? He walks how many miles farther to church than Edward?

6. Will walks how many rods to school? What part of a mile does Will walk?

7. How many rods is it from Arthur's house to Will's house? What part of a mile is it?

8. How many miles must Arthur walk to school?

9. How many rods is it from Tom's house to Arthur's house? What part of a mile is it? How many rods is it from Tom's house to Will's house? What part of a mile is it?

10. Tell which of these is the right number for each dotted line.

$\frac{1}{4}$ mi. $\frac{1}{2}$ mi. $\frac{3}{4}$ mi. 1 mi. $1\frac{1}{4}$ mi. $1\frac{1}{2}$ mi. $1\frac{3}{4}$ mi.
2 mi. $2\frac{1}{4}$ mi.

(1) From Tom's house to Louis's house ismi.

(2) From Edward's house to Louis's house ismi.

(3) From Arthur's house to Louis's house ismi.

(4) From Will's house to Louis's house ismi.

(5) From Rob's house to Louis's house ismi.

11. Tell the missing numbers.

$\frac{1}{4}$ mi. = ____ rd.	$1\frac{1}{4}$ mi. = ____ rd.
$\frac{1}{2}$ or $\frac{2}{4}$ mi. = ____ rd.	$1\frac{1}{2}$ or $1\frac{2}{4}$ mi. = ____ rd.
$\frac{3}{4}$ mi. = ____ rd.	$1\frac{3}{4}$ mi. = ____ rd.
1 mi. = ____ rd.	2 mi. = ____ rd.

1. Paul walked $1\frac{1}{2}$ miles to school and $1\frac{1}{2}$ miles back home. How far did he walk in all?

2. From Edward's home to his grandmother's house is $\frac{3}{4}$ of a mile. How far does Edward walk in going and returning?

3. Ted rode $1\frac{1}{2}$ miles on the street car and then walked $\frac{1}{4}$ mile to visit his aunt. How many miles did he go?

4. From Ida's home to her cousin Tom's house is $1\frac{1}{4}$ miles. Ida walked $\frac{1}{2}$ mile and then met her uncle with whom she rode the rest of the way. How far did they drive?

5. Tom walked $\frac{3}{4}$ of a mile to Ida's house and then rode the rest of the way in an auto truck. How far did Tom ride?

6. State the missing numbers.

$\frac{1}{2}$ mi. and $\frac{1}{4}$ mi. = $\frac{3}{4}$ mi.	$\frac{3}{4}$ mi. and $\frac{3}{4}$ mi. = $1\frac{1}{2}$ mi.
$\frac{1}{2}$ mi. and $\frac{1}{2}$ mi. = <u> </u> mi.	$\frac{3}{4}$ mi. and $\frac{1}{2}$ mi. = <u> </u> mi.
$\frac{1}{4}$ mi. and $\frac{1}{4}$ mi. = <u> </u> mi.	$\frac{1}{2}$ mi. and $\frac{1}{4}$ mi. = <u> </u> mi.
$\frac{3}{4}$ mi. and $\frac{1}{4}$ mi. = <u> </u> mi.	$\frac{1}{4}$ mi. and $1\frac{1}{2}$ mi. = <u> </u> mi.
$1\frac{1}{2}$ mi. and $1\frac{1}{2}$ mi. = <u> </u> mi.	$1\frac{1}{4}$ mi. and $1\frac{1}{4}$ mi. = <u> </u> mi.
$\frac{3}{4}$ mi. and $1\frac{1}{2}$ mi. = <u> </u> mi.	$2\frac{1}{2}$ mi. and $1\frac{3}{4}$ mi. = <u> </u> mi.

7. State the sums.

$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{4}$	$1\frac{1}{4}$	$\frac{1}{4}$
<u>$\frac{1}{2}$</u>	<u>$\frac{1}{4}$</u>	<u>$\frac{1}{2}$</u>	<u>$\frac{1}{4}$</u>	<u>$\frac{3}{4}$</u>	<u>$\frac{1}{4}$</u>	<u>$1\frac{1}{2}$</u>	<u>$\frac{1}{2}$</u>	<u>$1\frac{1}{2}$</u>	<u>$1\frac{3}{4}$</u>	<u>$\frac{3}{4}$</u>



Albert sold vegetables and fruits from his own garden in September at these prices per pound.

String beans.....	12¢	Cabbage.....	4¢
Tomatoes.....	6¢	Watermelons.....	2¢
Pumpkins.....	2¢	Potatoes.....	3¢
Squashes.....	4¢		

What did he charge for each of these purchases?

$3\frac{1}{4}$ lb. beans	$19\frac{1}{2}$ lb. pumpkin
$1\frac{1}{2}$ lb. cabbage	$4\frac{1}{3}$ lb. tomatoes
$8\frac{1}{2}$ lb. squash	$3\frac{1}{2}$ lb. tomatoes
15 lb. potatoes	$20\frac{1}{2}$ lb. watermelon
$1\frac{1}{4}$ lb. beans	$7\frac{1}{4}$ lb. beans
$3\frac{1}{4}$ lb. beans	$5\frac{1}{4}$ lb. beans
$6\frac{1}{2}$ lb. squash	$24\frac{1}{2}$ lb. watermelon
12 lb. potatoes	$4\frac{3}{4}$ lb. cabbage
$23\frac{1}{2}$ lb. pumpkin	$7\frac{1}{2}$ lb. squash
$5\frac{1}{2}$ lb. tomatoes	$36\frac{1}{2}$ lb. watermelon

Write the products.

$12 \times 3\frac{1}{2}$	$24 \times 3\frac{1}{4}$	$46 \times 2\frac{1}{2}$	$58 \times 5\frac{1}{2}$
$18 \times 4\frac{1}{2}$	$30 \times 6\frac{1}{2}$	$60 \times 4\frac{1}{4}$	$64 \times 6\frac{1}{4}$
$20 \times 5\frac{1}{4}$	$28 \times 4\frac{1}{4}$	$56 \times 2\frac{3}{4}$	$42 \times 5\frac{2}{3}$

1. George can count by $\frac{1}{2}$ to 20 in 30 seconds. He begins $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3. Can you count by $\frac{1}{2}$ to 10 in 30 seconds?

2. Charles can count by $\frac{1}{3}$ to 10 in 30 seconds. He begins $\frac{1}{3}$, $\frac{2}{3}$, 1, $1\frac{1}{3}$, $1\frac{2}{3}$, 2, $2\frac{1}{3}$. How fast can you count by $\frac{1}{3}$ to 10?

3. Anna can count by $\frac{1}{4}$ to 10 in 1 minute. She begins $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, 2, $2\frac{1}{4}$. How fast can you count in the same way to 10?

4. Ruth can count by $\frac{1}{5}$ to 5 in 45 seconds. She begins $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$, 1, $1\frac{1}{5}$, $1\frac{2}{5}$, $1\frac{3}{5}$, $1\frac{4}{5}$, 2. See if you can count to 5 in this way in 1 minute.

5. It took Fred 3 minutes to count by $\frac{1}{6}$ to 5. All the other children tried, but no one could do it in less time. Here is the way to count by $\frac{1}{6}$. Begin $\frac{1}{6}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{5}{6}$, 1, $1\frac{1}{6}$, $1\frac{1}{3}$, $1\frac{1}{2}$, $1\frac{2}{3}$, $1\frac{5}{6}$, 2. See if you can count by $\frac{1}{6}$ to 3 in 3 minutes.

6. See if you can count by $\frac{1}{8}$ to 5 in 4 minutes. Begin this way: $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$.

7. Say the missing numbers.

$$\frac{2}{4} = \frac{1}{2}$$

$$\frac{2}{6} = \frac{1}{3}$$

$$\frac{3}{6} = \frac{1}{2}$$

$$\frac{4}{6} = \frac{2}{3}$$

$$\frac{2}{8} = \text{—}$$

$$\frac{4}{8} = \text{—}$$

$$\frac{6}{8} = \text{—}$$

$$\frac{5}{10} = \text{—}$$

8. Say the missing numbers.

$$\frac{5}{4} = 1\frac{1}{4}$$

$$\frac{3}{2} = 1\frac{1}{2}$$

$$\frac{6}{4} = 1\frac{2}{4} \text{ or } 1\frac{1}{2}$$

$$\frac{7}{4} = 1\frac{3}{4}$$

$$\frac{9}{8} = \text{—}$$

$$\frac{7}{6} = \text{—}$$

$$\frac{4}{3} = \text{—}$$

$$\frac{5}{3} = \text{—}$$

$$\frac{6}{5} = \text{—}$$

$$\frac{4}{2} = \text{—}$$

$$\frac{11}{8} = \text{—}$$

$$\frac{6}{3} = \text{—}$$

HILL DAIRY CO.

Name Mrs. WilliamsMonth of October

	Milk		Cream		Certified Milk		Buttermilk
	16¢ Qt.	9¢ Pt.	17¢ $\frac{1}{2}$ Pt.	10¢ $\frac{1}{4}$ Pt.	22¢ Qt.	12¢ Pt.	11¢ Qt.
1	2		1			1	1
2	2	1		1	1		
3	1		1	1		1	

This card shows the amount of milk and cream sold to Mrs. Williams by the Hill Dairy Co. for the first three days in October.

1. How many pt. and qt. of milk did she get in that time? What was the total cost?

2. How many $\frac{1}{2}$ pt. of cream did she get? How many pt. is this? What was the cost?

3. How many $\frac{1}{4}$ pt. of cream did she get?

4. On October 3, she bought $\frac{1}{2}$ pt. and $\frac{1}{4}$ pt. How much cream did she get? What was the cost?

5. How many pt. of certified milk did she get? What did it cost?

6. How much in all did she owe the dairy at the end of 3 days?

7. In October Mrs. Williams bought 50 qt. of milk. What did the 50 qt. cost?

8. She bought 10 pt. of milk. What was the cost of 10 pt.?

9. How many pt. of milk did she use in all? What would Mrs. Williams' milk have cost if she had bought it all by the pt.?

10. In October Mrs. Williams bought twenty $\frac{1}{2}$ pt. bottles of cream. How much did it cost? How many pt. of cream is this?

11. She bought sixteen $\frac{1}{4}$ pt. bottles of cream. How many pt. of cream is this?

12. How much did Mrs. Williams pay for 10 qt. of certified milk?

13. How much did she pay for 15 pt. of certified milk? How many qt. in 15 pt.?

14. What did she pay for 9 qt. of butter-milk?

15. On Oct. 12 Mrs. Williams bought two $\frac{1}{2}$ pt. bottles of cream and one $\frac{1}{4}$ pt. bottle. How much cream did she get on that day?

16. Tell the missing number.

Ten $\frac{1}{2}$ pt. = ____ pt.

Eight $\frac{1}{4}$ pt. = ____ pt.

Fourteen $\frac{1}{2}$ pt. = ____ pt.

Twenty $\frac{1}{4}$ pt. = ____ pt.

Twenty $\frac{1}{2}$ pt. = ____ pt.

Sixteen $\frac{1}{4}$ pt. = ____ pt.

Eighteen $\frac{1}{2}$ pt. = ____ pt.

Twelve $\frac{1}{4}$ pt. = ____ pt.

1. The girls in the cooking class were told they should not use more than $\frac{1}{2}$ lb. of sugar a week in their cooking. Each girl chose 3 recipes. Here are the amounts of sugar needed for each. Which girls used just $\frac{1}{2}$ a lb.? Which girls used more than $\frac{1}{2}$ a lb.? Which girls used less than $\frac{1}{2}$ a lb.?



Remember $\frac{8}{8} = 1$; $\frac{16}{16} = 1$; $\frac{4}{8} = \frac{1}{2}$; $\frac{8}{16} = \frac{1}{2}$.

	Pearl	Ida	Tess	Edna	Anna	Louise	Kate
(1)	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{16}$	$\frac{5}{16}$	$\frac{3}{8}$
(2)	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{8}$
(3)	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{16}$	$\frac{1}{8}$

2. Nell needs a yard of lace to trim a pincushion. She can get remnants of lace with less than a yard in each at a small cost. Here are the lengths of some pieces that are alike. Which set will make a yard? Which will make more than a yard? Which will make less than a yard?

a.	b.	c.	d.	e.	f.	g.
$\frac{1}{4}$ yd.	$\frac{2}{3}$ yd.	$\frac{1}{2}$ yd.	$\frac{5}{6}$ yd.	$\frac{1}{4}$ yd.	$\frac{2}{3}$ yd.	$\frac{5}{6}$ yd.
$\frac{1}{4}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{4}$ yd.	$\frac{2}{3}$ yd.	$\frac{1}{6}$ yd.
$\frac{1}{4}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{4}$ yd.	$\frac{1}{3}$ yd.	$\frac{1}{6}$ yd.

3. State the missing numbers.

$\frac{1}{8}$ lb. = _____ oz.	$\frac{1}{16}$ lb. = _____ oz.	$\frac{5}{8}$ lb. = _____ oz.
$\frac{1}{4}$ lb. = _____ oz.	$\frac{5}{16}$ lb. = _____ oz.	$\frac{3}{4}$ lb. = _____ oz.



The Rock Hill boys have a walking club. Each member plans to walk 15 miles every week. They keep a record of the number of miles each boy walks every day. Tell how many miles each of these boys walked in a week.

	Will	Rob	Arthur	Edward	Louis	Tom
Sun.	$2\frac{1}{2}$	3	3	$2\frac{1}{4}$	$1\frac{1}{4}$	2
M.	$1\frac{1}{2}$	$2\frac{1}{2}$	4	3	4	$2\frac{1}{4}$
T.	2	$1\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{4}$	3	3
W.	2	1	1	2	$2\frac{1}{4}$	$1\frac{1}{4}$
Th.	$1\frac{1}{2}$	$2\frac{1}{2}$	3	$1\frac{1}{4}$	$1\frac{1}{4}$	$3\frac{1}{4}$
F.	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	3	3	2
Sat.	3	2	2	$2\frac{1}{4}$	$2\frac{1}{4}$	$1\frac{1}{4}$

	Paul	Jack	Edgar	George	Ted	Phil.
Sun.	$2\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{4}$	$3\frac{1}{4}$
M.	3	$2\frac{1}{2}$	2	2	$2\frac{1}{4}$	2
T.	4	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{4}$
W.	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	2	$2\frac{1}{4}$	$3\frac{1}{4}$
Th.	2	$2\frac{1}{2}$	$2\frac{1}{2}$	2	2	3
F.	2	$1\frac{1}{2}$	$2\frac{1}{2}$	2	2	$2\frac{1}{4}$
Sat.	1	3	$2\frac{1}{2}$	3	3	2

The Park keeper hired a number of boys one Saturday to help clean up the park. He paid them by the hour. Here is the number of hours each worked in the morning and in the afternoon. How many hours did each work in all?



	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. M.	$2\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{2}{6}$	$2\frac{1}{2}$	$1\frac{2}{3}$	$3\frac{5}{6}$	$2\frac{3}{4}$
P. M.	<u>3</u>	<u>$3\frac{1}{4}$</u>	<u>$2\frac{1}{3}$</u>	<u>$3\frac{1}{2}$</u>	<u>$2\frac{1}{3}$</u>	<u>$2\frac{1}{6}$</u>	<u>$3\frac{1}{4}$</u>
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
A. M.	$3\frac{1}{3}$	$2\frac{5}{6}$	$3\frac{3}{4}$	$1\frac{2}{3}$	$2\frac{1}{3}$	$2\frac{1}{6}$	$3\frac{1}{2}$
P. M.	<u>$2\frac{2}{3}$</u>	<u>$2\frac{1}{6}$</u>	<u>$2\frac{1}{4}$</u>	<u>$1\frac{1}{3}$</u>	<u>$2\frac{2}{3}$</u>	<u>$3\frac{2}{6}$</u>	<u>$2\frac{1}{2}$</u>

A fourth grade class took a test in addition, subtraction, multiplication, and division. Their teacher marked the exact time it took each one to finish each test. Which child took the longest time? Which took the shortest time? How many took less than 12 minutes for all the tests?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Add. . .	$3\frac{1}{6}$	$2\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{5}{6}$	4	$3\frac{1}{2}$	$2\frac{5}{6}$
Sub. . .	$2\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$	2	$3\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{6}$
Mult. . .	$3\frac{1}{2}$	3	$3\frac{1}{4}$	$3\frac{1}{6}$	$2\frac{1}{2}$	$3\frac{1}{4}$	$2\frac{1}{2}$
Div. . .	3	$2\frac{1}{4}$	$2\frac{1}{4}$	2	3	$2\frac{1}{4}$	$2\frac{1}{2}$



Some of the boys who fish in Great Bear Lake sell their fish to Mr. Sands. They weigh each fish first on their little pocket scale.

1. Harry caught a $1\frac{1}{2}$ lb. fish, a $2\frac{1}{2}$ lb. fish, and a $2\frac{3}{8}$ lb. fish. How many pounds of fish had he in all?

2. Jack caught a $3\frac{1}{2}$ lb. fish and a $2\frac{1}{4}$ lb. fish. How many pounds of fish had he?

3. Edwin caught a $4\frac{1}{4}$ lb. fish and a $2\frac{1}{2}$ lb. fish. How many pounds had he?

4. Charles caught a $5\frac{1}{2}$ lb. fish and a $1\frac{3}{4}$ lb. fish. How many pounds had he?

5. William caught a $2\frac{1}{2}$ lb. fish, a $2\frac{1}{4}$ lb. fish, and a $1\frac{3}{4}$ lb. fish. How many pounds had he?

George's mother sells butter to her friends in the city. She sends it to each customer by parcel post in a pail. George adds the weight of the pail and the weight of the butter and puts the right amount of postage on each package.

Here are the weights of the pails and the weights of butter put into each. Tell the weight of both.

Pail	Butter	Pail	Butter	Pail	Butter
$\frac{1}{4}$ lb.	$5\frac{1}{4}$ lb.	$\frac{1}{2}$ lb.	$4\frac{1}{2}$ lb.	$\frac{5}{8}$ lb.	$5\frac{1}{8}$ lb.
$\frac{1}{4}$ lb.	$6\frac{1}{4}$ lb.	$\frac{1}{4}$ lb.	$4\frac{3}{4}$ lb.	$\frac{1}{2}$ lb.	$4\frac{1}{4}$ lb.

How many of these can you add in 1 minute?
In 2 minutes? Remember $\frac{9}{8} = 1\frac{1}{8}$, $\frac{5}{4} = 1\frac{1}{4}$.

(1) $\frac{1}{8}$ $\frac{3}{8}$ <u>$\frac{5}{8}$</u>	(2) $\frac{1}{6}$ $\frac{1}{6}$ <u>$\frac{5}{6}$</u>	(3) $\frac{1}{3}$ $\frac{2}{3}$ <u>$\frac{1}{3}$</u>	(4) $\frac{1}{4}$ $\frac{3}{4}$ <u>$\frac{3}{4}$</u>	(5) $\frac{1}{6}$ $\frac{1}{6}$ <u>$\frac{1}{6}$</u>	(6) $\frac{3}{4}$ $\frac{1}{4}$ <u>$\frac{1}{4}$</u>	(7) $\frac{1}{5}$ $\frac{2}{5}$ <u>$\frac{3}{5}$</u>	(8) $\frac{1}{2}$ $\frac{1}{2}$ <u>$\frac{1}{2}$</u>
(9) $1\frac{1}{2}$ 2 <u>$2\frac{1}{2}$</u>	(10) $3\frac{1}{4}$ $2\frac{1}{4}$ <u>3</u>	(11) $2\frac{1}{8}$ $3\frac{1}{8}$ <u>$2\frac{3}{8}$</u>	(12) $2\frac{1}{6}$ $1\frac{1}{6}$ <u>3</u>	(13) $2\frac{3}{4}$ $2\frac{1}{4}$ <u>1</u>	(14) $2\frac{1}{5}$ $1\frac{1}{5}$ <u>2</u>	(15) $2\frac{2}{3}$ $1\frac{1}{3}$ <u>3</u>	(16) $2\frac{1}{2}$ 2 <u>$3\frac{1}{2}$</u>
(17) $1\frac{1}{4}$ 2 <u>$3\frac{1}{4}$</u>	(18) $2\frac{1}{2}$ $2\frac{1}{2}$ <u>3</u>	(19) $1\frac{1}{2}$ $1\frac{1}{2}$ <u>$2\frac{1}{2}$</u>	(20) $3\frac{1}{6}$ $1\frac{1}{6}$ <u>$2\frac{1}{6}$</u>	(21) $2\frac{5}{6}$ $3\frac{1}{6}$ <u>$1\frac{1}{6}$</u>	(22) $2\frac{1}{4}$ $2\frac{3}{4}$ <u>$3\frac{1}{4}$</u>	(23) $1\frac{1}{2}$ 2 <u>$3\frac{1}{2}$</u>	(24) $1\frac{1}{4}$ 2 <u>$3\frac{3}{4}$</u>
(25) $2\frac{1}{8}$ $2\frac{3}{8}$ <u>$1\frac{1}{8}$</u>	(26) $2\frac{5}{8}$ $1\frac{1}{8}$ <u>1</u>	(27) $3\frac{2}{3}$ $1\frac{1}{3}$ <u>$2\frac{1}{3}$</u>	(28) $3\frac{5}{6}$ 2 <u>$3\frac{1}{6}$</u>	(29) $4\frac{1}{2}$ $2\frac{1}{2}$ <u>4</u>	(30) $3\frac{5}{8}$ $2\frac{3}{8}$ <u>3</u>	(31) $3\frac{1}{4}$ $2\frac{1}{4}$ <u>$3\frac{1}{4}$</u>	(32) $2\frac{5}{6}$ $3\frac{1}{6}$ <u>$2\frac{1}{6}$</u>
(33) $1\frac{5}{6}$ $2\frac{1}{6}$ <u>3</u>	(34) $3\frac{5}{8}$ 3 <u>$2\frac{5}{8}$</u>	(35) $4\frac{1}{2}$ $2\frac{1}{2}$ <u>3</u>	(36) $3\frac{3}{4}$ $2\frac{1}{4}$ <u>4</u>	(37) $2\frac{3}{5}$ 3 <u>$4\frac{2}{5}$</u>	(38) $3\frac{1}{3}$ $2\frac{1}{3}$ <u>$3\frac{1}{3}$</u>	(39) $2\frac{1}{8}$ $3\frac{3}{8}$ <u>4</u>	(40) $3\frac{1}{4}$ $2\frac{1}{4}$ <u>$3\frac{1}{4}$</u>

Write the sums. How many of these can you add in 5 minutes?

How fast can you add all the examples on this page?

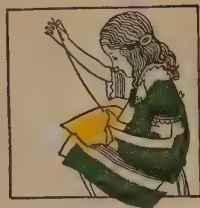
(1)	$15\frac{1}{2}$	$60\frac{1}{3}$	$48\frac{1}{2}$	$18\frac{1}{4}$	$47\frac{3}{4}$	$96\frac{1}{3}$
	20	34	75	34	25	21
	$42\frac{1}{2}$	$91\frac{2}{3}$	$62\frac{1}{2}$	$61\frac{1}{4}$	$68\frac{1}{4}$	$17\frac{1}{3}$
	<u>87</u>	<u>26</u>	<u>91</u>	<u>19</u>	<u>34</u>	<u>56</u>

(2)	$64\frac{1}{5}$	$19\frac{1}{4}$	$18\frac{2}{3}$	$50\frac{3}{5}$	$74\frac{1}{6}$	$69\frac{3}{4}$
	$38\frac{2}{5}$	31	72	16	38	27
	25	$26\frac{3}{4}$	$49\frac{1}{3}$	$36\frac{2}{5}$	$25\frac{5}{6}$	$13\frac{1}{4}$
	<u>17</u>	<u>52</u>	<u>23</u>	<u>54</u>	<u>19</u>	<u>80</u>

(3)	$46\frac{1}{2}$	$55\frac{1}{3}$	$78\frac{1}{4}$	$10\frac{2}{3}$	$90\frac{1}{4}$	$13\frac{1}{6}$
	$34\frac{1}{2}$	$23\frac{1}{3}$	$43\frac{1}{4}$	$25\frac{1}{3}$	19	$54\frac{1}{6}$
	$78\frac{1}{2}$	$64\frac{1}{3}$	$79\frac{1}{4}$	86	$26\frac{1}{4}$	$78\frac{1}{6}$
	<u>$92\frac{1}{2}$</u>	<u>10</u>	<u>$57\frac{1}{4}$</u>	<u>68</u>	<u>29</u>	<u>13</u>

(4)	$42\frac{5}{6}$	$75\frac{1}{8}$	$48\frac{1}{3}$	$92\frac{3}{8}$	$16\frac{1}{8}$	$28\frac{1}{4}$
	$35\frac{1}{6}$	$68\frac{3}{8}$	29	$53\frac{5}{8}$	$44\frac{1}{8}$	51
	43	19	60	15	$67\frac{1}{8}$	69
	76	48	$72\frac{2}{3}$	32	15	$78\frac{1}{4}$
	<u>43</u>	<u>41</u>	<u>32</u>	<u>26</u>	<u>$85\frac{1}{8}$</u>	<u>$17\frac{1}{4}$</u>

1. At the first lesson of the sewing class, each girl received 1 yard of goods. She could make anything she liked.



Here are some of the things that were made and the amount of goods used for each. What part of a yard had each girl left?

- | | |
|--|---|
| (1) A pillow cover... $\frac{1}{2}$ yd. | (6) A window curtain... $\frac{2}{3}$ yd. |
| (2) A doll's dress... $\frac{1}{3}$ yd. | (7) A dresser scarf... $\frac{3}{8}$ yd. |
| (3) A pair of cuffs... $\frac{1}{8}$ yd. | (8) A table cover... $\frac{5}{8}$ yd. |
| (4) A collar... $\frac{1}{6}$ yd. | (9) A laundry bag... $\frac{7}{8}$ yd. |
| (5) An apron... $\frac{3}{4}$ yd. | (10) A baby cap... $\frac{1}{4}$ yd. |

2. The next week each girl received a 2 yard piece of goods. Here are the amounts that were used by each girl. How much had each one left?

- $1\frac{1}{2}$ yd. $1\frac{2}{3}$ yd. $1\frac{1}{8}$ yd. $1\frac{3}{4}$ yd. $1\frac{5}{8}$ yd. $1\frac{7}{8}$ yd.
 $1\frac{1}{6}$ yd. $1\frac{1}{3}$ yd.

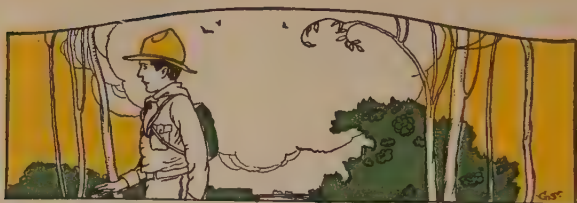


3. John needs a piece of lumber just 3 feet long. How much too short is each of these pieces? Here are their lengths.

- $2\frac{1}{2}$ ft. $2\frac{3}{8}$ ft. $2\frac{2}{3}$ ft. $2\frac{5}{6}$ ft. $2\frac{3}{4}$ ft.
 $2\frac{7}{8}$ ft. $2\frac{1}{3}$ ft.

4. How much too long is each of these pieces? Here are their lengths.

- $3\frac{3}{4}$ ft. $3\frac{1}{6}$ ft. $4\frac{1}{2}$ ft. $3\frac{7}{8}$ ft. $4\frac{3}{4}$ ft. $3\frac{5}{6}$ ft. $3\frac{2}{3}$ ft. $4\frac{1}{3}$ ft.



1. Bert walked $13\frac{1}{2}$ miles. How many more miles does he need to walk to make his record 15 miles?

Subtract

15 Think, " $\frac{1}{2}$ and $\frac{1}{2} = 1$." Write $\frac{1}{2}$.

$13\frac{1}{2}$ Think, "4 and 1 = 5." Write 1.
 $\underline{13\frac{1}{2}}$
 $1\frac{1}{2}$

2. Fred walked $9\frac{3}{5}$ miles. How many more miles does he need to walk to make his record 15 miles?

Subtract

15 Think, " $\frac{3}{5}$ and $\frac{2}{5} = 1$." Write $\frac{2}{5}$.

$9\frac{3}{5}$ Think, "10 and 5 = 15." Write 5.
 $\underline{9\frac{3}{5}}$
 $5\frac{2}{5}$

3. These boys are planning to walk 50 miles in 3 weeks. Here are their records at the end of the first week. How many more miles has each one to walk?

Sam	George	Bert	Charles	Jay	Fred	Rex
$15\frac{1}{2}$	$17\frac{1}{4}$	$13\frac{1}{2}$	$21\frac{3}{4}$	$18\frac{1}{4}$	$26\frac{1}{4}$	$19\frac{1}{4}$

4. Here are their records at the end of the second week. How many miles has each boy still to walk?

Sam	George	Bert	Charles	Jay	Fred	Rex
$31\frac{3}{4}$	$35\frac{1}{2}$	$29\frac{1}{2}$	$36\frac{1}{2}$	$33\frac{1}{4}$	$34\frac{1}{2}$	$37\frac{1}{4}$

1. Some fourth grade children were given 4 minutes for an arithmetic test. Eight children finished in less than 4 minutes. Here is the number of minutes taken by each of the eight. How many minutes ahead of time did each finish?

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$3\frac{1}{3}$	$2\frac{5}{6}$	$3\frac{1}{2}$	$3\frac{5}{6}$	$2\frac{2}{3}$	$3\frac{4}{5}$	$3\frac{2}{3}$	$3\frac{3}{5}$

2. Twenty boys went to a farm for three weeks in the summer. 12 of the boys gained in weight. The top row of numbers shows what each of these boys weighed at the end of three weeks. The second row shows what each boy weighed when he went to the farm.

How many pounds did each gain in weight?

(1)	(2)	(3)	(4)	(5)	(6)
69	70	$65\frac{1}{2}$	$59\frac{3}{4}$	62	71
<u>$67\frac{1}{2}$</u>	<u>$66\frac{1}{2}$</u>	<u>$62\frac{1}{2}$</u>	<u>$57\frac{1}{2}$</u>	<u>$58\frac{1}{4}$</u>	<u>$64\frac{1}{2}$</u>
(7)	(8)	(9)	(10)	(11)	(12)
54	61	$63\frac{1}{2}$	$68\frac{1}{2}$	$67\frac{1}{4}$	64
<u>$49\frac{1}{4}$</u>	<u>$57\frac{1}{2}$</u>	<u>$58\frac{1}{2}$</u>	<u>$63\frac{1}{4}$</u>	<u>$62\frac{1}{4}$</u>	<u>$60\frac{1}{2}$</u>

3. Subtract. Write the differences.

$36\frac{1}{2}$	$45\frac{3}{4}$	$28\frac{1}{2}$	$47\frac{3}{4}$	$35\frac{1}{2}$	$49\frac{1}{4}$	$37\frac{1}{2}$	$56\frac{1}{2}$
<u>12</u>	<u>15</u>	<u>$16\frac{1}{2}$</u>	<u>$26\frac{1}{4}$</u>	<u>$24\frac{1}{2}$</u>	<u>28</u>	<u>31</u>	<u>26</u>

Take Test IX, page 307.



1. On the last day of the school year the children of the Columbia School had a picnic. All of the children in the school and all of the teachers marched to the street cars.

2. There were 165 children in the first grade, 132 in the second, 94 in the third, 87 in the fourth, and 12 teachers. How many marched in the parade?

3. Each one in the parade carried a flag. The flags were bought in bundles of 12 each. How many bundles were needed? (Single flags were not sold.)

4. The cost of the flags was 47¢ a bundle. What was the cost of all the flags?

5. Each child in the first grade wore a cap made of red, white, and blue paper. It took one and a half ($1\frac{1}{2}$) sheets of white, one-half ($\frac{1}{2}$) sheet of red, and one-fourth ($\frac{1}{4}$) sheet of blue paper for each cap. How many sheets of each color were needed?

6. The paper is sold in quires. Each quire contains 24 sheets. How many full quires of each color were needed? How many extra single sheets of each color were needed?

7. The second grade children wore scarfs of bunting. Each scarf took one-half a yard of cloth. How many yards were needed?

8. The children in the third and fourth grades and all the teachers wore ribbon badges. Each badge was 4 inches long. How many yards were required for all the children?

9. The first and second grade children marched 8 in a row. The other grades marched 6 in a row. The extra children marched with the teachers. How many rows of children were there?

10. There were 8 street cars waiting to take the children and teachers to the picnic. What was the average number of persons for each car?

11. The head of the parade left the school house at 8:55 and reached the street cars at 9:15. How long a walk was it to the street car?

12. The first street car left at 9:25 and reached the picnic grounds at 10:15. How long a ride was it?

13. The children and teachers were admitted free at the park gate, but all others gave a ticket. At night there were in the ticket box 520 adults' tickets and 627 children's tickets. How many children in all were at the picnic? How many adults?

14. If each child's ticket cost 15¢, how much was made on children's tickets? If each adult's ticket cost 25¢, how much was made on adults' tickets? How much was made in all on tickets?

15. There were sold 100 gal. of ice cream. How much would have been required if each person ate $\frac{1}{2}$ pt.? Would 100 gal. be enough?

16. The ice cream cost \$2.00 a gal. and was sold at 15¢ for $\frac{1}{2}$ pt. measure. How much was made on it?

17. Soda water was bought at 75¢ for a case of 24 bottles. 45 cases were sold at 5¢ a bottle. How much was made on the soda?

18. Packages for the fish pond were bought at 2 for 5¢. 342 children fished at 5¢ each. How much profit was made on the fish pond?

19. There was a prize for guessing the number of beans in a jar. The jar held 584 beans. John and Mary were nearest. John guessed 602, and Mary guessed 569. Which one won?

20. Boats on the lake could be hired at 25¢ an hour. John hired a boat at 10:35. When was his hour over? James hired one at 11:45 and returned it at 1 o'clock. How much should he pay the boatman? Tom and Jay hired a boat together for 4 hours. How much should each pay?

1. Tom weighed $53\frac{1}{2}$ lb. on his 9th birthday and 60 lb. on his 10th birthday. How many lb. did he gain in one year?

2. Tom was $48\frac{1}{2}$ in. in height on his 9th birthday and $51\frac{1}{2}$ in. on his 11th birthday. How many inches did he grow in 2 years?

3. 16 boys went to a summer camp together. The railroad fare was 87¢ apiece each way. What was the total cost of their railroad fare?

4. What must you add to the number in the lower line to make the number in the upper line?

4	3	3	$3\frac{1}{2}$	4	$3\frac{7}{8}$	$3\frac{2}{3}$	$3\frac{3}{4}$
<u>$3\frac{1}{2}$</u>	<u>$2\frac{1}{3}$</u>	<u>$2\frac{3}{4}$</u>	<u>$2\frac{1}{2}$</u>	<u>$3\frac{7}{8}$</u>	<u>$3\frac{5}{8}$</u>	<u>$2\frac{1}{3}$</u>	<u>$3\frac{3}{4}$</u>

5. A man bought a house, which he rented to two families. He received \$22 a month rent from each family for a year. The taxes on his house cost \$50 a year, and repairs cost \$45. How much did he have left from the rent of his house?

6. Jay's mother pays \$18 a month rent. She is going to be out of the city for three months. It will cost her \$15 to move her goods to the storage house and \$5 a month for storage. Which is cheaper, to pay rent while she is away or to store her goods?

<u>6</u>	<u>8</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>5</u>	<u>9</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>5</u>	<u>4</u>	<u>8</u>	<u>7</u>	<u>7</u>
<u>9</u>	<u>5</u>	<u>5</u>	<u>9</u>	<u>6</u>	<u>8</u>	<u>7</u>	<u>9</u>	<u>2</u>	<u>3</u>	<u>9</u>	<u>8</u>	<u>7</u>	<u>5</u>	<u>8</u>
<u>9</u>	<u>7</u>	<u>2</u>	<u>7</u>	<u>9</u>	<u>6</u>	<u>5</u>	<u>8</u>	<u>3</u>	<u>9</u>	<u>8</u>	<u>3</u>	<u>6</u>	<u>0</u>	<u>2</u>
<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>8</u>	<u>8</u>	<u>7</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>6</u>	<u>6</u>
<u>8</u>	<u>6</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>7</u>	<u>5</u>	<u>3</u>
<u>0</u>	<u>7</u>	<u>9</u>	<u>9</u>	<u>4</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>8</u>	<u>7</u>	<u>1</u>	<u>9</u>	<u>2</u>	<u>6</u>	<u>8</u>
<u>6</u>	<u>6</u>	<u>6</u>	<u>4</u>	<u>9</u>	<u>3</u>	<u>8</u>	<u>0</u>	<u>7</u>	<u>1</u>	<u>8</u>	<u>7</u>	<u>2</u>	<u>3</u>	<u>3</u>
<u>0</u>	<u>3</u>	<u>6</u>	<u>7</u>	<u>0</u>	<u>7</u>	<u>9</u>	<u>5</u>	<u>0</u>	<u>7</u>	<u>4</u>	<u>4</u>	<u>8</u>	<u>6</u>	<u>0</u>
<u>2</u>	<u>0</u>	<u>6</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>6</u>	<u>8</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>5</u>	<u>4</u>
<u>5</u>	<u>2</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>1</u>	<u>8</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>1</u>
<u>9</u>	<u>2</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>9</u>	<u>1</u>	<u>8</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>9</u>
<u>1</u>	<u>1</u>	<u>6</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>6</u>	<u>2</u>	<u>7</u>	<u>5</u>	<u>4</u>	<u>0</u>	<u>9</u>
<u>4</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>8</u>	<u>5</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
<u>5</u>	<u>2</u>	<u>3</u>	<u>8</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>

SUBTRACTION

Write the answers on a folded slip of paper. Try to write all the answers correctly in 3 minutes or less.

<u>16</u> <u>9</u>	<u>17</u> <u>9</u>	<u>11</u> <u>9</u>	<u>16</u> <u>7</u>	<u>11</u> <u>4</u>	<u>15</u> <u>9</u>	<u>17</u> <u>8</u>	<u>13</u> <u>5</u>	<u>11</u> <u>3</u>	<u>15</u> <u>6</u>	<u>15</u> <u>8</u>	<u>11</u> <u>2</u>	<u>11</u> <u>7</u>
<u>6</u> <u>1</u>	<u>13</u> <u>4</u>	<u>4</u> <u>1</u>	<u>14</u> <u>9</u>	<u>13</u> <u>9</u>	<u>9</u> <u>0</u>	<u>18</u> <u>9</u>	<u>9</u> <u>7</u>	<u>7</u> <u>1</u>	<u>6</u> <u>0</u>	<u>12</u> <u>5</u>	<u>2</u> <u>0</u>	<u>10</u> <u>9</u>
<u>11</u> <u>6</u>	<u>12</u> <u>7</u>	<u>10</u> <u>6</u>	<u>13</u> <u>7</u>	<u>1</u> <u>0</u>	<u>4</u> <u>0</u>	<u>5</u> <u>0</u>	<u>14</u> <u>8</u>	<u>7</u> <u>0</u>	<u>8</u> <u>0</u>	<u>11</u> <u>5</u>	<u>12</u> <u>3</u>	<u>13</u> <u>8</u>
<u>15</u> <u>7</u>	<u>14</u> <u>6</u>	<u>11</u> <u>8</u>	<u>7</u> <u>5</u>	<u>9</u> <u>3</u>	<u>4</u> <u>3</u>	<u>3</u> <u>0</u>	<u>14</u> <u>7</u>	<u>14</u> <u>5</u>	<u>13</u> <u>6</u>	<u>10</u> <u>2</u>	<u>9</u> <u>6</u>	<u>7</u> <u>3</u>
<u>5</u> <u>1</u>	<u>12</u> <u>6</u>	<u>9</u> <u>5</u>	<u>8</u> <u>4</u>	<u>6</u> <u>3</u>	<u>8</u> <u>2</u>	<u>8</u> <u>1</u>	<u>2</u> <u>1</u>	<u>16</u> <u>8</u>	<u>12</u> <u>8</u>	<u>10</u> <u>4</u>	<u>9</u> <u>9</u>	<u>8</u> <u>8</u>
<u>6</u> <u>4</u>	<u>8</u> <u>3</u>	<u>7</u> <u>2</u>	<u>6</u> <u>2</u>	<u>3</u> <u>2</u>	<u>2</u> <u>2</u>	<u>3</u> <u>1</u>	<u>12</u> <u>9</u>	<u>10</u> <u>8</u>	<u>7</u> <u>7</u>	<u>6</u> <u>6</u>	<u>8</u> <u>5</u>	<u>6</u> <u>5</u>
<u>4</u> <u>4</u>	<u>5</u> <u>3</u>	<u>3</u> <u>3</u>	<u>9</u> <u>2</u>	<u>4</u> <u>2</u>	<u>4</u> <u>2</u>	<u>9</u> <u>1</u>	<u>1</u> <u>1</u>	<u>10</u> <u>7</u>	<u>12</u> <u>4</u>	<u>0</u> <u>0</u>	<u>5</u> <u>2</u>	
<u>5</u> <u>4</u>	<u>7</u> <u>4</u>	<u>9</u> <u>4</u>	<u>5</u> <u>5</u>	<u>7</u> <u>6</u>	<u>8</u> <u>6</u>	<u>8</u> <u>6</u>	<u>8</u> <u>7</u>	<u>9</u> <u>8</u>	<u>10</u> <u>1</u>	<u>10</u> <u>3</u>	<u>10</u> <u>5</u>	

TEST III

MULTIPLICATION

This test contains all the multiplication facts using 2 figure multiplicands and multipliers. Copy the numbers and multiply. Try to write the answers correctly in 15 minutes or less. Prove your answers by long division.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
43	51	60	34	87	34	78	60	43	60	43	87
<u>27</u>	<u>16</u>	<u>48</u>	<u>93</u>	<u>46</u>	<u>84</u>	<u>28</u>	<u>61</u>	<u>51</u>	<u>50</u>	<u>60</u>	<u>95</u>

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
92	51	29	15	78	29	15	92	15	60	92	78	60
<u>24</u>	<u>45</u>	<u>56</u>	<u>72</u>	<u>10</u>	<u>98</u>	<u>39</u>	<u>37</u>	<u>80</u>	<u>32</u>	<u>10</u>	<u>73</u>	<u>97</u>

TEST IV

MULTIPLICATION

This test contains all the multiplication facts. Copy the numbers and multiply. Try to write the answers correctly in 20 minutes or less. Prove your answers by long division.

1.	2.	3.	4.	5.
43157	65342	73098	26145	80692
<u>73</u>	<u>10</u>	<u>29</u>	<u>92</u>	<u>37</u>
6.	7.	8.	9.	10.
15046	75301	46982	87392	78901
<u>45</u>	<u>68</u>	<u>86</u>	<u>54</u>	<u>10</u>

TEST V

SUBTRACTION

Write the answers on a folded slip of paper in 2 minutes or less.

18 <u>9</u>	10 <u>9</u>	16 <u>9</u>	12 <u>9</u>	17 <u>8</u>	15 <u>8</u>	12 <u>7</u>	15 <u>6</u>	13 <u>5</u>
14 <u>8</u>	16 <u>7</u>	10 <u>7</u>	11 <u>6</u>	10 <u>4</u>	10 <u>1</u>	17 <u>9</u>	14 <u>9</u>	12 <u>8</u>
13 <u>7</u>	14 <u>6</u>	10 <u>6</u>	12 <u>5</u>	11 <u>4</u>	12 <u>3</u>	11 <u>9</u>	16 <u>8</u>	11 <u>7</u>
14 <u>5</u>	10 <u>2</u>	13 <u>4</u>	13 <u>9</u>	10 <u>8</u>	14 <u>7</u>	13 <u>6</u>	10 <u>5</u>	10 <u>3</u>
15 <u>7</u>	12 <u>6</u>	11 <u>3</u>	11 <u>2</u>	12 <u>4</u>	11 <u>8</u>	15 <u>9</u>	13 <u>8</u>	11 <u>5</u>

TEST VI

DIVISION

Try this test in 20 minutes.

$$73 \overline{)31806}$$

$$37 \overline{)321604}$$

$$29 \overline{)214542}$$

$$92 \overline{)243340}$$

$$54 \overline{)142830}$$

$$45 \overline{)393255}$$

$$86 \overline{)647924}$$

$$68 \overline{)474776}$$

TEST VII

SUBTRACTION

This test contains the 100 subtraction facts. Do not copy the numbers. Write the answers on a sheet of paper placed below the examples. Try to write the answers correctly in 12 minutes or less.

1.	2.	3.	4.	5.	6.
803145	92785	876004	51400	82325	584963
<u>463490</u>	<u>44159</u>	<u>227350</u>	<u>28271</u>	<u>35814</u>	<u>127430</u>
7.	8.	9.	10.	11.	12.
938932	91721	643547	90323	75427	541012
<u>321005</u>	<u>14413</u>	<u>458580</u>	<u>62665</u>	<u>48328</u>	<u>515190</u>
13.	14.	15.	16.	17.	18.
987196	76645	976668	95621	808021	334710
<u>879160</u>	<u>22347</u>	<u>165690</u>	<u>92082</u>	<u>658877</u>	<u>261700</u>

TEST VIII

ADDITION

Write the sums on a folded slip of paper. Try to write all the answers correctly in 3 minutes.

\$8.70	\$2.15	\$48.54	\$55.89	\$19.85
9.58	3.79	67.99	27.95	30.02
7.63	4.84	23.30	74.75	75.90
<u>8.72</u>	<u>2.75</u>	<u>54.42</u>	<u>26.63</u>	<u>54.65</u>

TEST IX

ADDITION

Write the sums on a folded slip of paper. Try to write all the answers correctly in 10 minutes or less.

8685	7521	2846	8253	7296
4944	2754	6389	7594	6802
5636	4856	3528	6031	3690
3678	7039	3893	7426	3285
<u>3869</u>	<u>9483</u>	<u>4678</u>	<u>7426</u>	<u>9735</u>
3580	4765	7944	8759	6804
6295	3698	4689	8387	7557
3782	8787	7398	4555	5687
9061	7669	7474	1804	8848
<u>3648</u>	<u>8327</u>	<u>8363</u>	<u>8468</u>	<u>9579</u>

TEST X

DIVISION

Try this test in 20 minutes.

	a.	b.	c.	d.
1.	29 $\overline{)1073}$	28 $\overline{)4060}$	27 $\overline{)7155}$	72 $\overline{)55296}$
2.	89 $\overline{)45924}$	28 $\overline{)26712}$	44 $\overline{)13552}$	86 $\overline{)55560}$
3.	22 $\overline{)34678}$	62 $\overline{)4030}$	46 $\overline{)2116}$	66 $\overline{)4554}$
4.	69 $\overline{)4071}$	47 $\overline{)4653}$	91 $\overline{)5551}$	61 $\overline{)3111}$
5.	76 $\overline{)3268}$	76 $\overline{)2736}$	61 $\overline{)3965}$	79 $\overline{)1264}$

10. Use the number at the right of each row as the divisor and the larger numbers at the left as dividends. Find the quotients.

I.

156	144	252	384	288	516	432	12
180	345	225	600	795	960	495	15
198	594	828	396	486	576	990	18
275	575	450	825	975	850	375	25
231	462	882	924	714	987	693	21
651	992	1302	1705	465	372	744	31

II. Remainders more than half as large as divisors.

390	540	855	990	720	405	870	15
357	546	399	588	966	777	987	21
442	612	646	799	952	986	816	17
494	741	893	532	703	513	874	19
400	650	900	725	950	875	450	25

III. Remainders less than half the divisors.

375	525	975	825	675	960	660	15
714	945	504	924	294	525	735	21
875	625	350	375	850	600	825	25
316	476	616	742	756	882	896	14
285	456	475	646	855	665	836	19

IV. Four-place dividends. Zero in quotient.

2424	4824	7248	9672	3600	24
3264	8048	6432	9648	4880	16
7550	5025	2600	9500	1000	25
2185	5738	7695	8360	9880	19
4284	6930	8820	5040	2520	21

LONG DIVISION

I.	13	$\overline{2639}$	25	$\overline{7550}$	20	$\overline{8040}$	15	$\overline{4575}$
	21	$\overline{4263}$	16	$\overline{4880}$	21	$\overline{8463}$	13	$\overline{3991}$
	19	$\overline{3876}$	14	$\overline{2856}$	19	$\overline{5795}$	15	$\overline{6090}$
II.	25	$\overline{15075}$	20	$\overline{18040}$	13	$\overline{10478}$	16	$\overline{11264}$
	21	$\overline{10563}$	13	$\overline{11752}$	19	$\overline{13338}$	31	$\overline{15593}$
	19	$\overline{11457}$	12	$\overline{10896}$	22	$\overline{11088}$	29	$\overline{14587}$
III.	25	$\overline{7540}$	20	$\overline{8095}$	16	$\overline{8055}$	15	$\overline{9065}$
	16	$\overline{6478}$	15	$\overline{6078}$	21	$\overline{6390}$	18	$\overline{7245}$
	21	$\overline{8467}$	19	$\overline{7635}$	24	$\overline{9675}$	21	$\overline{4295}$
IV.	15	$\overline{645}$	25	$\overline{900}$	20	$\overline{920}$	18	$\overline{396}$
	15	$\overline{360}$	21	$\overline{693}$	18	$\overline{576}$	25	$\overline{575}$
	21	$\overline{882}$	19	$\overline{798}$	22	$\overline{682}$	24	$\overline{768}$
V.	16	$\overline{3600}$	13	$\overline{5629}$	25	$\overline{8550}$	20	$\overline{6380}$
	21	$\overline{5061}$	21	$\overline{6762}$	19	$\overline{4579}$	18	$\overline{5938}$
	15	$\overline{6525}$	16	$\overline{3888}$	21	$\overline{6531}$	19	$\overline{4066}$
VI.	25	$\overline{65057}$	20	$\overline{72065}$	13	$\overline{31245}$	15	$\overline{67584}$
	21	$\overline{65145}$	19	$\overline{24748}$	18	$\overline{45082}$	21	$\overline{88279}$
VII.	25	$\overline{52780}$	20	$\overline{43505}$	15	$\overline{64659}$	12	$\overline{63907}$
	21	$\overline{25419}$	21	$\overline{67518}$	22	$\overline{70709}$	15	$\overline{65450}$

Length

1 inch or 1 in.

12 inches = 1 foot (ft.)

3 feet = 1 yard (yd.)

 $16\frac{1}{2}$ feet = 1 rod (rd.)

5280 feet = 1 mile (mi.)

320 rods = 1 mile (mi.)

Time

60 seconds = 1 minute (min.)

60 minutes = 1 hour (hr.)

24 hours = 1 day (da.)

7 days = 1 week (wk.)

365 days = 1 year (yr.)

366 days = 1 leap year

100 years = 1 century

Area

One
Square
Inch
or
1 sq. in.

1 sq. ft. = a square 1 ft. long and 1 ft. wide

1 sq. rd. = a square a rod long and a rod wide

144 sq. in. = 1 square foot (sq. ft.)

9 sq. ft. = 1 square yard (sq. yd.)

Liquid Measure

2 pints (pt.) = 1 quart (qt.)

4 quarts = 1 gallon (gal.)

Dry Measure

8 quarts = 1 peck (pk.)

4 pecks = 1 bushel (bu.)

Money

10 cents = 1 dime

10 dimes = 1 dollar

4 quarters = 1 dollar

100 cents = 1 dollar

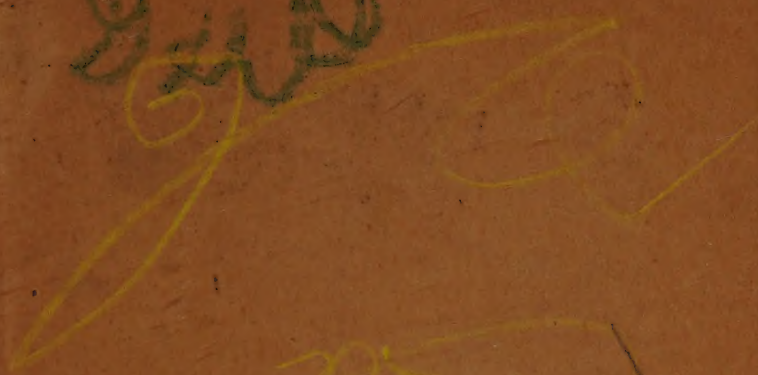
Weight

16 ounces = 1 pound (lb.)

2000 pounds = 1 ton (T.)



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